Department of War
Fiscal Year (FY) 2027 Budget Estimates

April 2026

Navy

Justification Book Volume 1 of 5

Research, Development, Test & Evaluation, Navy

Budget Activities 1, 2, and 3

THIS PAGE INTENTIONALLY LEFT BLANK

Table of Volumes

Budget Activities 1, 2, and 3.....Volume 1

Budget Activity 4.....Volume 2

Budget Activity 5.....Volume 3

Budget Activity 6.....Volume 4

Budget Activities 7 and 8.....Volume 5

THIS PAGE INTENTIONALLY LEFT BLANK

Volume 1 Table of Contents

Cost of Report..... Volume 1 - v

Introduction and Explanation of Contents.....Volume 1 - vii

Comptroller Exhibit R-1..... Volume 1 - ix

Master Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 1 - xxvii

Master Program Element Table of Contents (Alphabetically by Program Element Title)..... Volume 1 - xliii

Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 1 - lv

Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 1 - lix

Executive Summary.....Volume 1 - lxi

Exhibit R-2s.....Volume 1 - 1

THIS PAGE INTENTIONALLY LEFT BLANK

RDTEN 1 (BA 1-3)	The estimated cost of this report for the Department of the Navy (DON) is $23,696. The estimated total cost for supporting the DON budget justification material is approximately $3,188,286 during the 2026 fiscal year. This includes $207,573 in supplies and $2,980,713 in labor.	$23,696
RDTEN 2 (BA 4)	The estimated cost of this report for the Department of the Navy (DON) is $101,648. The estimated total cost for supporting the DON budget justification material is approximately $3,188,286 during the 2026 fiscal year. This includes $207,573 in supplies and $2,980,713 in labor.	$101,648
RDTEN 3 (BA 5)	The estimated cost of this report for the Department of the Navy (DON) is $195,187. The estimated total cost for supporting the DON budget justification material is approximately $3,188,286 during the 2026 fiscal year. This includes $207,573 in supplies and $2,980,713 in labor.	$195,187
RDTEN 4 (BA 6)	The estimated cost of this report for the Department of the Navy (DON) is $23,361. The estimated total cost for supporting the DON budget justification material is approximately $3,188,286 during the 2026 fiscal year. This includes $207,573 in supplies and $2,980,713 in labor.	$23,361
RDTEN 5 (BA 7-8)	The estimated cost of this report for the Department of the Navy (DON) is $103,900. The estimated total cost for supporting the DON budget justification material is approximately $3,188,286 during the 2026 fiscal year. This includes $207,573 in supplies and $2,980,713 in labor.	$103,900

THIS PAGE INTENTIONALLY LEFT BLANK

Department of Defense Appropriations Act, 2027

Research, Development, Test and Evaluation, Navy

For expenses necessary for basic and applied scientific research, development, test and evaluation, including maintenance, rehabilitation, lease, and operation of facilities and equipment, $32,386,619 to remain available for obligation until September 30, 2028.

THIS PAGE INTENTIONALLY LEFT BLANK

Department of War
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
Research, Development, Test and Evaluation, Navy	26,098,258	27,942,776	6,747,792	34,690,568	32,386,619	3,849,854	36,236,473
Total Research, Development, Test, & Evaluation	**26,098,258**	**27,942,776**	**6,747,792**	**34,690,568**	**32,386,619**	**3,849,854**	**36,236,473**

Department of War
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
Summary Recap of Budget Activities							
Basic research	600,485	596,521	8,000	604,521	525,399		525,399
Applied research	1,138,780	1,335,242	80,000	1,415,242	935,252		935,252
Advanced technology development	1,073,856	1,489,654	85,213	1,574,867	1,062,399		1,062,399
Advanced component development and prototypes	7,637,051	7,717,996	4,774,120	12,492,116	11,237,683	2,301,041	13,538,724
System development and demonstration	7,411,751	8,449,871	1,358,394	9,808,265	8,977,280	72,115	9,049,395
Management support	1,704,261	1,073,631	68,292	1,141,923	1,207,295		1,207,295
Operational system development	6,507,478	7,234,693	373,773	7,608,466	8,402,995	1,476,698	9,879,693
Software and digital technology pilot programs	24,596	45,168		45,168	38,316		38,316
Total Research, Development, Test, & Evaluation	**26,098,258**	**27,942,776**	**6,747,792**	**34,690,568**	**32,386,619**	**3,849,854**	**36,236,473**
Summary Recap of FYDP Programs							
Strategic Forces	513,375	991,694	1,741,009	2,732,703	1,320,443		1,320,443
General Purpose Forces	2,072,372	1,794,841	542,385	2,337,226	2,813,093		2,813,093
Intelligence and Communications	1,102,503	941,721	73,589	1,015,310	958,878		958,878
Research and Development	20,081,116	21,389,738	4,390,809	25,780,547	24,526,506	3,849,854	28,376,360
Central Supply and Maintenance	30,908	26,972		26,972	9,807		9,807
Administration and Associated Activities	4,445	2,041		2,041	2,054		2,054
Classified Programs	2,293,539	2,795,769		2,795,769	2,755,838		2,755,838
Total Research, Development, Test, & Evaluation	**26,098,258**	**27,942,776**	**6,747,792**	**34,690,568**	**32,386,619**	**3,849,854**	**36,236,473**

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
Summary Recap of Budget Activities							
Basic research	600,485	596,521	8,000	604,521	525,399		525,399
Applied research	1,138,780	1,335,242	80,000	1,415,242	935,252		935,252
Advanced technology development	1,073,856	1,489,654	85,213	1,574,867	1,062,399		1,062,399
Advanced component development and prototypes	7,637,051	7,717,996	4,774,120	12,492,116	11,237,683	2,301,041	13,538,724
System development and demonstration	7,411,751	8,449,871	1,358,394	9,808,265	8,977,280	72,115	9,049,395
Management support	1,704,261	1,073,631	68,292	1,141,923	1,207,295		1,207,295
Operational system development	6,507,478	7,234,693	373,773	7,608,466	8,402,995	1,476,698	9,879,693
Software and digital technology pilot programs	24,596	45,168		45,168	38,316		38,316
Total Research, Development, Test, & Evaluation	**26,098,258**	**27,942,776**	**6,747,792**	**34,690,568**	**32,386,619**	**3,849,854**	**36,236,473**
Summary Recap of FYDP Programs							
Strategic Forces	513,375	991,694	1,741,009	2,732,703	1,320,443		1,320,443
General Purpose Forces	2,072,372	1,794,841	542,385	2,337,226	2,813,093		2,813,093
Intelligence and Communications	1,102,503	941,721	73,589	1,015,310	958,878		958,878
Research and Development	20,081,116	21,389,738	4,390,809	25,780,547	24,526,506	3,849,854	28,376,360
Central Supply and Maintenance	30,908	26,972		26,972	9,807		9,807
Administration and Associated Activities	4,445	2,041		2,041	2,054		2,054
Classified Programs	2,293,539	2,795,769		2,795,769	2,755,838		2,755,838
Total Research, Development, Test, & Evaluation	**26,098,258**	**27,942,776**	**6,747,792**	**34,690,568**	**32,386,619**	**3,849,854**	**36,236,473**

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
1	0601103N	University Research Initiatives	01	U	113,248	68,947		68,947			
2	0601153N	Defense Research Sciences	01	U	487,237	527,574	8,000	535,574	525,399		525,399
	Basic research				**600,485**	**596,521**	**8,000**	**604,521**	**525,399**		**525,399**
3	0602114N	Power Projection Applied Research	02	U	24,837	39,323		39,323	38,838		38,838
4	0602123N	Force Protection Applied Research	02	U	183,150	243,086		243,086	137,779		137,779
5	0602131M	Marine Corps Landing Force Technology	02	U	56,730	62,108		62,108	57,567		57,567
6	0602235N	Common Picture Applied Research	02	U	50,260	70,209		70,209	40,433		40,433
7	0602236N	Warfighter Sustainment Applied Research	02	U	85,865	118,188		118,188	60,350		60,350
8	0602271N	Electromagnetic Systems Applied Research	02	U	95,977	148,469		148,469	74,603		74,603
9	0602435N	Ocean Warfighting Environment Applied Research	02	U	111,321	117,471		117,471	64,693		64,693
10	0602651M	Joint Non-Lethal Weapons Applied Research	02	U	7,487	7,300		7,300	4,105		4,105
11	0602747N	Undersea Warfare Applied Research	02	U	90,135	120,808		120,808	52,515		52,515
12	0602750N	Future Naval Capabilities Applied Research	02	U	162,804	308,776		308,776	305,357		305,357
13	0602782N	Mine and Expeditionary Warfare Applied Research	02	U	29,294	18,081	80,000	98,081	24,634		24,634
14	0602792N	Innovative Naval Prototypes (INP) Applied Research	02	U	140,590						
15	0602861N	Science and Technology Management - ONR Field Acitivities	02	U	100,330	81,423		81,423	74,378		74,378
	Applied research				**1,138,780**	**1,335,242**	**80,000**	**1,415,242**	**935,252**		**935,252**
16	0603123N	Force Protection Advanced Technology	03	U	54,667	113,756	21,800	135,556	50,869		50,869

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
17	0603271N	Electromagnetic Systems Advanced Technology	03	U	8,282	14,436		14,436	8,635		8,635
18	0603273N	Science & Technology for Nuclear Re-entry Systems	03	U	115,050	121,618		121,618	114,767		114,767
19	0603640M	USMC Advanced Technology Demonstration (ATD)	03	U	287,017	447,950	63,413	511,363	287,897		287,897
20	0603651M	Joint Non-Lethal Weapons Technology Development	03	U	15,702	6,561		6,561	8,727		8,727
21	0603673N	Future Naval Capabilities Advanced Technology Development	03	U	250,477	523,426		523,426	445,977		445,977
22	0603680N	Manufacturing Technology Program	03	U	61,192	78,065		78,065	79,132		79,132
23	0603729N	Warfighter Protection Advanced Technology	03	U	7,518	31,787		31,787			
24	0603758N	Navy Warfighting Experiments and Demonstrations	03	U	133,296	149,980		149,980	66,395		66,395
25	0603782N	Mine and Expeditionary Warfare Advanced Technology	03	U	1,988	2,075		2,075			
26	0603801N	Innovative Naval Prototypes (INP) Advanced Technology Development	03	U	138,667						
	Advanced technology development				**1,073,856**	**1,489,654**	**85,213**	**1,574,867**	**1,062,399**		**1,062,399**
27	0603128N	Unmanned Aerial System	04	U	75,841	28,388		28,388	35,706		35,706
28	0603178N	Large Unmanned Surface Vehicles (LUSV)	04	U	45,514		57,860	57,860			
29	0603207N	Air/Ocean Tactical Applications	04	U	48,819	35,409		35,409	76,141		76,141
30	0603216N	Aviation Survivability	04	U	22,877	24,064		24,064	20,010		20,010
31	0603239N	Naval Construction Forces	04	U	7,563	13,102		13,102	7,726		7,726
32	0603254N	ASW Systems Development	04	U	18,058	33,384		33,384	20,070		20,070
33	0603261N	Tactical Airborne Reconnaissance	04	U	3,358	2,241		2,241	3,239		3,239

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
34	0603382N	Advanced Combat Systems Technology	04	U	6,817	19,307	39,000	58,307	32,263		32,263
35	0603502N	Surface and Shallow Water Mine Countermeasures	04	U	28,558	32,359		32,359	32,451		32,451
36	0603506N	Surface Ship Torpedo Defense	04	U	4,632	11,832		11,832	9,920		9,920
37	0603512N	Carrier Systems Development	04	U	5,583	8,361		8,361	8,806		8,806
38	0603525N	PILOT FISH	04	U	937,900	1,118,482		1,118,482	1,339,052		1,339,052
39	0603536N	RETRACT JUNIPER	04	U	197,772	184,606		184,606	275,300		275,300
40	0603542N	Radiological Control	04	U	795	730		730	704		704
41	0603553N	Surface ASW	04	U	1,147						
42	0603561N	Undersea Warfare System Development	04	U	103,870	171,718		171,718	132,885		132,885
43	0603562N	Submarine Tactical Warfare Systems	04	U	14,695						
44	0603563N	Ship Concept Advanced Design	04	U	95,525	4,823	162,200	167,023	353,893		353,893
45	0603564N	Ship Preliminary Design & Feasibility Studies	04	U	52,843	100,845	29,200	130,045	666,640		666,640
46	0603570N	Advanced Nuclear Power Systems	04	U	318,002	343,831		343,831	392,426		392,426
47	0603573N	Advanced Surface Machinery Systems	04	U	80,955	150,330		150,330	269,961		269,961
48	0603576N	CHALK EAGLE	04	U	120,707	142,822	25,000	167,822	149,351		149,351
49	0603581N	Littoral Combat Ship (LCS)	04	U	8,955	10,203		10,203	12,576		12,576
50	0603582N	Combat System Integration	04	U	19,933	19,643		19,643	18,819		18,819
51	0603595N	Ohio Replacement	04	U	188,012	278,305		278,305	331,577		331,577
52	0603596N	LCS Mission Modules	04	U	28,533	39,258		39,258	46,239		46,239
53	0603597N	Automated Test and Re-Test (ATRT)	04	U	25,030	29,169		29,169	18,070		18,070
54	0603598N	ATRT Enterprise Rapid Capability	04	U	51,454	116,459		116,459	87,585		87,585

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
55	0603599N	Frigate Development	04	U	103,211	81,218		81,218	212,041		212,041
56	0603609N	Conventional Munitions	04	U	8,801	10,877		10,877	10,216		10,216
57	0603635M	Marine Corps Ground Combat/Support System	04	U	89,449	222,951	4,750	227,701	521,995		521,995
58	0603654N	Joint Service Explosive Ordnance Development	04	U	46,263	43,657		43,657	43,568		43,568
59	0603713N	Ocean Engineering Technology Development	04	U	15,430	9,647		9,647	15,903		15,903
60	0603721N	Environmental Protection	04	U	22,796	22,829		22,829	19,347		19,347
61	0603724N	Navy Energy Program	04	U	80,698	58,162	98,372	156,534	59,591		59,591
62	0603725N	Facilities Improvement	04	U	8,718	10,925		10,925	13,738		13,738
63	0603734N	CHALK CORAL	04	U	829,575	776,792	500,000	1,276,792	995,658		995,658
64	0603739N	Navy Logistic Productivity	04	U	5,826	977		977	929		929
65	0603746N	RETRACT MAPLE	04	U	593,506	614,380		614,380	655,551		655,551
66	0603748N	LINK PLUMERIA	04	U	345,553	385,360	90,000	475,360	498,853		498,853
67	0603751N	RETRACT ELM	04	U	98,939	106,810		106,810	87,999		87,999
68	0603764M	LINK EVERGREEN	04	U	450,729	521,007		521,007	593,835		593,835
69	0603790N	NATO Research and Development	04	U	4,953	5,035		5,035	5,513		5,513
70	0603795N	Land Attack Technology	04	U	1,673	1,056		1,056	985		985
71	0603851M	Joint Non-Lethal Weapons Testing	04	U	29,360	9,832		9,832	14,152		14,152
72	0603860N	Joint Precision Approach and Landing Systems - Dem/Val	04	U	3,994	33,978		33,978	73,813		73,813
73	0603889N	Counterdrug RDT&E Projects	04	U					6,500		6,500
74	0603925N	Directed Energy and Electric Weapon Systems	04	U	19,319	14,480		14,480	94,825		94,825

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
75	0604014N	F/A -18 Infrared Search and Track (IRST)	04	U	8,556						
76	0604027N	Digital Warfare Office	04	U	141,844	150,033		150,033	182,205		182,205
77	0604028N	Small and Medium Unmanned Undersea Vehicles	04	U	51,775		180,252	180,252	24,598		24,598
78	0604029N	Unmanned Undersea Vehicle Core Technologies	04	U	111,241		124,180	124,180	62,460		62,460
79	0604030N	Rapid Prototyping, Experimentation and Demonstration.	04	U	107,754						
80	0604031N	Large Unmanned Undersea Vehicles	04	U	6,776		360,000	360,000			
81	0604112N	Gerald R. Ford Class Nuclear Aircraft Carrier (CVN 78 - 80)	04	U	91,597	112,704		112,704	111,241		111,241
82	0604127N	Surface Mine Countermeasures	04	U	13,940	18,504		18,504	17,762		17,762
83	0604272N	Tactical Air Directional Infrared Countermeasures (TADIRCM)	04	U	41,438	14,387		14,387	14,974		14,974
84	0604286N	Navy Advanced Manufacturing	04	U			186,000	186,000	10,016		10,016
85	0604289M	Next Generation Logistics	04	U	8,058	2,722		2,722	24		24
86	0604292N	Future Vertical Lift (Maritime Strike)	04	U	4,704	7,125		7,125	5,314		5,314
87	0604295M	Marine Aviation Demonstration/Validation	04	U	54,091	38,873		38,873	47,152		47,152
88	0604320M	Rapid Technology Capability Prototype	04	U	82,173	89,007	18,500	107,507	125,999		125,999
89	0604454N	LX (R)	04	U	9,677	26,709		26,709	18,574		18,574
90	0604536N	Advanced Undersea Prototyping	04	U	20,859	60,480	389,408	449,888	164,512		164,512
91	0604545N	Advanced Ship Building Industrial Base and Future Ship Experimental	04	U						1,850,000	1,850,000

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
92	0604636N	Counter Unmanned Aircraft Systems (C-UAS)	04	U	15,422	16,689		16,689	20,833		20,833
93	0604659N	Precision Strike Weapons Development Program	04	U	127,295	251,765	89,333	341,098	206,873		206,873
94	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	04	U	8,554	6,605		6,605	8,657		8,657
95	0604786N	Offensive Anti-Surface Warfare Weapon Development	04	U	273,393	183,023	118,000	301,023	104,527		104,527
96	0605512N	MEDIUM UNMANNED SURFACE VEHICLES (MUSVs))	04	U	98,858		39,426	39,426			
97	0605513N	Unmanned Surface Vehicle Enabling Capabilities	04	U	102,122	24,115	315,330	339,445	255,135		255,135
98	0605514M	GROUND BASED ANTI-SHIP MISSILE	04	U	48,953	57,965		57,965	16,307		16,307
99	0605516M	LONG RANGE FIRES	04	U	19,934						
100	0605518N	CONVENTIONAL PROMPT STRIKE (CPS)	04	U	874,781	763,394		763,394	1,341,416	451,041	1,792,457
101	0105519N	Nuclear-Armed Sea-Launched Cruise Missile (SLCM-N) Support	04	U			1,677,309	1,677,309			
102	0207147M	Collaborative Combat Aircraft	04	U		5,000	270,000	275,000	213,934		213,934
103	0303260N	Defense Military Deception Initiative	04	U		1,980		1,980			
104	0303354N	ASW Systems Development - MIP	04	U	7,253	3,864		3,864	3,206		3,206
105	0304240M	Advanced Tactical Unmanned Aircraft System	04	U	3,504	2,822		2,822	1,979		1,979
106	0304270N	Electronic Warfare Development - MIP	04	U	1,395	1,278		1,278			
107	0304797N	Undersea Artificial Intelligence / Machine Learning (AI/ML)	04	U	28,563	29,308		29,308	13,563		13,563
	Advanced component development and prototypes				**7,637,051**	**7,717,996**	**4,774,120**	**12,492,116**	**11,237,683**	**2,301,041**	**13,538,724**

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
108	0603208N	Training System Aircraft	05	U	25,493	15,101		15,101	80,617		80,617
109	0604038N	Maritime Targeting Cell	05	U	43,301	147,802		147,802	216,514		216,514
110	0604212N	Other Helo Development	05	U		987		987	976		976
111	0604214M	AV-8B Aircraft - Eng Dev	05	U	5,299						
112	0604215N	Standards Development	05	U	4,919	4,540		4,540	4,399		4,399
113	0604216N	Multi-Mission Helicopter Upgrade Development	05	U	63,906	114,071		114,071	88,855		88,855
114	0604230N	Warfare Support System	05	U	105,924	15,778	39,300	55,078	73,080		73,080
115	0604231N	Command and Control Systems	05	U	139,697	64,547		64,547	73,534		73,534
116	0604234N	Advanced Hawkeye	05	U	295,273	350,324		350,324	390,260		390,260
117	0604245M	H-1 Upgrades	05	U	43,732	62,240		62,240	66,446		66,446
118	0604261N	Acoustic Search Sensors	05	U	51,894	52,549		52,549	48,875		48,875
119	0604262N	V-22	05	U	96,469	144,072		144,072	252,335		252,335
120	0604264N	Air Crew Systems Development	05	U	29,180	44,297		44,297	21,582		21,582
121	0604269N	EA-18	05	U	164,122	184,921		184,921	131,683		131,683
122	0604270N	Electronic Warfare Development	05	U	179,572	185,606		185,606	168,985		168,985
123	0604273M	Executive Helo Development	05	U	49,968	74,980		74,980	69,438		69,438
124	0604274N	Next Generation Jammer (NGJ)	05	U	74,950	64,167		64,167	50,332		50,332
125	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	U	321,150	330,855		330,855	409,318		409,318
126	0604282N	Next Generation Jammer (NGJ) Increment II	05	U	142,651	215,256		215,256	497,011		497,011
127	0604307N	Surface Combatant Combat System Engineering	05	U	512,559	524,135	65,000	589,135	425,060		425,060
128	0604329N	Small Diameter Bomb (SDB)	05	U	21,234	23,836		23,836	64,428		64,428

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
129	0604366N	Standard Missile Improvements	05	U	248,688	511,712		511,712	539,279		539,279
130	0604373N	Airborne MCM	05	U	9,422	8,372		8,372	8,567		8,567
131	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	U	40,618	39,878		39,878	42,177		42,177
132	0604501N	Advanced Above Water Sensors	05	U	108,585	67,881		67,881	67,900		67,900
133	0604503N	Submarine SWFTS Modernization	05	U	94,484	213,804		213,804	195,361		195,361
134	0604504N	Air Control	05	U	60,478	23,930		23,930	41,610		41,610
135	0604512N	Shipboard Aviation Systems	05	U	12,597	33,704		33,704	30,970		30,970
136	0604516N	Ship Survivability	05	U		4,364		4,364	7,861		7,861
137	0604518N	Combat Information Center Conversion	05	U	10,458						
138	0604522N	Air and Missile Defense Radar (AMDR) System	05	U	104,171	74,937		74,937	96,642		96,642
139	0604530N	Advanced Arresting Gear (AAG)	05	U	10,744	34,933		34,933	60,518		60,518
140	0604558N	New Design SSN	05	U	264,102	255,010		255,010	237,103		237,103
141	0604562N	Submarine Tactical Warfare System	05	U	70,147						
142	0604567N	Ship Contract Design/ Live Fire T&E	05	U	13,191	35,634		35,634	19,429		19,429
143	0604574N	Navy Tactical Computer Resources	05	U	3,898	3,552		3,552	3,415		3,415
144	0604601N	Mine Development	05	U	83,393	130	178,326	178,456	158,666		158,666
145	0604610N	Lightweight Torpedo Development	05	U	92,266	5,065	88,179	93,244	102,159		102,159
146	0604654N	Joint Service Explosive Ordnance Development	05	U	8,774	8,740		8,740	8,509		8,509
147	0604657M	USMC Ground Combat/Supporting Arms Systems - Eng Dev	05	U	32,576	17,377		17,377	69,478		69,478

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
148	0604703N	Personnel, Training, Simulation, and Human Factors	05	U	9,626	6,703		6,703	8,316		8,316
149	0604727N	Joint Standoff Weapon Systems	05	U	1,510	895		895	1,447		1,447
150	0604755N	Ship Self Defense (Detect & Control)	05	U	166,701	167,711		167,711	156,167		156,167
151	0604756N	Ship Self Defense (Engage: Hard Kill)	05	U	57,754	145,007	200,000	345,007	296,261		296,261
152	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	U	144,970	232,368		232,368	196,761		196,761
153	0604761N	Intelligence Engineering	05	U	23,810	7,023		7,023	6,426		6,426
154	0604771N	Medical Development	05	U	8,110	11,487		11,487	6,900		6,900
155	0604777N	Navigation/ID System	05	U	42,932	3,724		3,724	3,388		3,388
156	0604850N	SSN(X)	05	U	327,385	335,987		335,987	315,914		315,914
157	0605013M	Information Technology Development	05	U	14,632	16,000		16,000	14,380		14,380
158	0605013N	Information Technology Development	05	U	333,279	234,102		234,102	149,089		149,089
159	0605024N	Anti-Tamper Technology Support	05	U	3,304	3,428		3,428	3,459		3,459
160	0605180N	TACAMO Modernization	05	U	727,931	1,043,978		1,043,978	1,662,723		1,662,723
161	0605212M	CH-53K RDTE	05	U	71,398	135,432		135,432	139,273		139,273
162	0605215N	Mission Planning	05	U	113,212	120,255		120,255	82,618		82,618
163	0605217N	Common Avionics	05	U	85,470	67,944		67,944	133,855		133,855
164	0605220N	Ship to Shore Connector (SSC)	05	U	6,115	15,948	1,688	17,636	4,519		4,519
165	0605285N	Next Generation Fighter	05	U	437,492	940,493	750,000	1,690,493	68,498	72,115	140,613
166	0605414N	Unmanned Carrier Aviation (UCA)	05	U	251,254	314,754		314,754			
167	0605450M	Joint Air-to-Ground Missile (JAGM)	05	U	20,027	59,077		59,077	189,866		189,866

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
168	0605500N	Multi-mission Maritime Aircraft (MMA)	05	U	32,992	41,129		41,129	87,173		87,173
169	0605504N	Multi-Mission Maritime (MMA) Increment III	05	U	120,834	103,397		103,397	52,951		52,951
170	0605516N	Long Range Fires	05	U	117,690	138,443		138,443	186,735		186,735
171	0605611M	Marine Corps Assault Vehicles System Development & Demonstration	05	U	44,472	49,471		49,471	12,461		12,461
172	0605813M	Joint Light Tactical Vehicle (JLTV) System Development & Demonstration	05	U	9,934	6,984		6,984	2,413		2,413
173	0204202N	Destroyers Guided Missile (DDG-1000)	05	U	216,153	58,817		58,817	50,166		50,166
174	0301377N	Countering Advanced Conventional Weapons (CACW)	05	U	19,517	16,906		16,906	15,563		15,563
175	0302315N	Non-Kinetic Countermeasure Support	05	U	8,324	23,818		23,818	23,146		23,146
176	0303267N	Auctioned Spectrum Relocation Fund	05	U	13,443						
177	0303667N	Citizen Broadband Radio System	05	U	1,473						
178	0303867N	AMBIT - Post-Auctioned SRF	05	U	84,793						
179	0303968N	SPP-L3G-7/8Ghz - DSS	05	U	8,290						
180	0303970N	SPP-L3G-ADSSD	05	U	51,358						
181	0304785N	ISR & Info Operations	05	U	188,392	177,567		177,567	274,478		274,478
182	0305282M	Joint Fires Network (JFN)	05	U			35,901	35,901			
183	0306250M	Cyber Operations Technology Development	05	U	7,289	11,936		11,936	8,962		8,962
	System development and demonstration				**7,411,751**	**8,449,871**	**1,358,394**	**9,808,265**	**8,977,280**	**72,115**	**9,049,395**
184	0604256N	Threat Simulator Development	06	U	25,374	25,133		25,133	16,453		16,453

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
185	0604258N	Target Systems Development	06	U	15,744	16,602		16,602	22,653		22,653
186	0604759N	Major T&E Investment	06	U	65,039	64,842		64,842	112,458		112,458
187	0605152N	Studies and Analysis Support - Navy	06	U	5,534	3,596		3,596	4,336		4,336
188	0605154N	Center for Naval Analyses	06	U	42,277	31,695		31,695	28,310		28,310
189	0605502N	Small Business Innovative Research	06	U	585,723						
190	0605804N	Technical Information Services	06	U	1,819						
191	0605853N	Management, Technical & International Support	06	U	138,947	133,538	68,292	201,830	124,898		124,898
192	0605856N	Strategic Technical Support	06	U	3,400	3,709		3,709	4,260		4,260
193	0605863N	RDT&E Ship and Aircraft Support	06	U	150,974	151,479		151,479	170,699		170,699
194	0605864N	Test and Evaluation Support	06	U	476,655	463,725		463,725	470,492		470,492
195	0605865N	Operational Test and Evaluation Capability	06	U	30,032	30,880		30,880	31,902		31,902
196	0605866N	Navy Space and Electronic Warfare (SEW) Support	06	U	22,983	22,563		22,563	21,498		21,498
197	0605867N	SEW Surveillance/Reconnaissance Support	06	U	6,390	7,325		7,325	25,144		25,144
198	0605873M	Marine Corps Program Wide Support	06	U	30,088	28,816		28,816	70,013		70,013
199	0605898N	Management HQ - R&D	06	U	41,405	42,751		42,751	33,533		33,533
200	0606295M	Marine Aviation Developmental Management and Support	06	U	4,922	4,732		4,732	19,165		19,165
201	0606355N	Warfare Innovation Management	06	U	49,590	37,551		37,551	35,931		35,931
202	0606942N	Assessments and Evaluations Cyber Vulnerabilities	06	U					11,282		11,282
203	0305327N	Insider Threat	06	U	2,920	2,653		2,653	2,214		2,214

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
204	0902498N	Management Headquarters (Departmental Support Activities)	06	U	2,232	2,041		2,041	2,054		2,054
205	0909980N	Judgment Fund Reimbursement	06	U	181						
206	0909999N	Financing for Cancelled Account Adjustments	06	U	2,032						
	Management support				**1,704,261**	**1,073,631**	**68,292**	**1,141,923**	**1,207,295**		**1,207,295**
208	0604840M	F-35 C2D2	07	U	465,005	418,084		418,084	469,779	787,779	1,257,558
209	0604840N	F-35 C2D2	07	U	451,143	401,262		401,262	428,545	688,919	1,117,464
210	0605520M	MARINE CORPS AIR DEFENSE WEAPONS SYSTEMS	07	U	82,640	63,863		63,863	133,041		133,041
211	0607658N	Cooperative Engagement Capability (CEC)	07	U	138,660	136,436		136,436	120,782		120,782
212	0101221N	Strategic Sub & Weapons System Support	07	U	326,596	828,337		828,337	1,051,736		1,051,736
213	0101224N	SSBN Security Technology Program	07	U	58,663	63,252		63,252	65,856		65,856
214	0101226N	Submarine Acoustic Warfare Development	07	U	99,201	47,701	63,700	111,401	114,279		114,279
215	0101402N	Navy Strategic Communications	07	U	28,915	52,404		52,404	88,572		88,572
216	0204136N	F/A-18 Squadrons	07	U	328,703	395,927		395,927	271,429		271,429
217	0204228N	Surface Support	07	U	8,419						
218	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	U	163,035	134,177	80,175	214,352	76,653		76,653
219	0204311N	Integrated Surveillance System	07	U	71,459	71,800		71,800	71,901		71,901
220	0204313N	Ship-Towed Array Surveillance Systems	07	U	1,428	1,990		1,990	954		954
221	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	U	2,211		1,679	1,679	1,526		1,526

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
222	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	07	U	39,754	32,045		32,045	66,255		66,255
223	0204571N	Consolidated Training Systems Development	07	U	156,770	199,067		199,067	115,839		115,839
224	0204575N	Electronic Warfare (EW) Readiness Support	07	U	220,689	115,834		115,834	198,560		198,560
225	0205601N	Anti-Radiation Missile Improvement	07	U	21,949	33,659		33,659	80,491		80,491
226	0205620N	Surface ASW Combat System Integration	07	U	28,793						
227	0205632N	MK-48 ADCAP	07	U	142,331	53,338	180,000	233,338	123,011		123,011
228	0205633N	Aviation Improvements	07	U	134,381	138,522		138,522	108,505		108,505
229	0205675N	Operational Nuclear Power Systems	07	U	167,098	209,200		209,200	252,893		252,893
230	0206313M	Marine Corps Communications Systems	07	U	146,787	128,384		128,384	268,983		268,983
231	0206335M	Common Aviation Command and Control System (CAC2S)	07	U	17,626	17,813		17,813			
232	0206623M	Marine Corps Ground Combat/Supporting Arms Systems	07	U	69,049	72,552		72,552	79,031		79,031
233	0206624M	Marine Corps Combat Services Support	07	U	34,905	20,419	10,531	30,950	19,915		19,915
234	0206625M	USMC Intelligence/Electronic Warfare Systems	07	U	37,372	41,789		41,789	149,055		149,055
235	0207161N	Tactical AIM Missiles	07	U	30,668	34,650		34,650	122,518		122,518
236	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	U	29,247	26,286		26,286	24,675		24,675
237	0207255N	MQ-25 Stingray	07	U					513,308		513,308
238	0208043N	Planning and Decision Aid System (PDAS)	07	U	3,545	3,572		3,572	3,491		3,491

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
242	0303138N	Afloat Networks	07	U	56,115	78,465		78,465	68,369		68,369
243	0303140N	Information Systems Security Program	07	U	34,397	64,147		64,147	79,128		79,128
244	0305192N	Military Intelligence Program (MIP) Activities	07	U	7,239	3,311	37,688	40,999	5,187		5,187
245	0305205N	UAS Integration and Interoperability	07	U		9,654		9,654			
246	0305208M	Distributed Common Ground/Surface Systems	07	U	45,550	61,238		61,238			
247	0305220N	MQ-4C Triton	07	U	14,402	14,421		14,421	10,515		10,515
248	0305232M	RQ-11 UAV	07	U	2,016	1,063		1,063	19,842		19,842
249	0305241N	Multi-Intelligence Sensor Development	07	U	40,267	41,414		41,414	49,898		49,898
250	0305242M	Unmanned Aerial Systems (UAS) Payloads (MIP)	07	U	10,917	9,157		9,157	20,750		20,750
251	0305421N	MQ-4C Triton Modernization	07	U	444,042	361,943		361,943	344,890		344,890
252	0307577N	Intelligence Mission Data (IMD)	07	U	791	803		803	787		787
253	0308601N	Modeling and Simulation Support	07	U	20,253	23,973		23,973	16,401		16,401
254	0702207N	Depot Maintenance (Non-IF)	07	U	26,752	23,372		23,372	8,097		8,097
255	0708730N	Maritime Technology (MARITECH)	07	U	4,156	3,600		3,600	1,710		1,710
999	999999999	Classified Programs	07	U	2,293,539	2,795,769		2,795,769	2,755,838		2,755,838
	Operational system development				**6,507,478**	**7,234,693**	**373,773**	**7,608,466**	**8,402,995**	**1,476,698**	**9,879,693**
256	0608013N	Risk management Information - Software Pilot Program	08	U	14,307	13,341		13,341	13,017		13,017
257	0608231N	Maritime Tactical Command and Control (MTC2) - Software Pilot Program	08	U	10,289	31,827		31,827	25,299		25,299

Department of the Navy
FY 2027 President's Budget
Exhibit R-1
Total Obligational Authority
(Dollars in Thousands)

Appropriation: 1319N Research, Development, Test and Evaluation, Navy

Line No	Program Element Number	Item	Act	Sec	FY 2025 Actuals	FY 2026 Discretionary Enacted	FY 2026 PL 119-21 Spend Plan	FY 2026 Total	FY 2027 Discretionary Request	FY 2027 Mandatory Request	FY 2027 Total
		Software and digital technology pilot programs			24,596	45,168		45,168	38,316		38,316
Total Research, Development, Test and Evaluation, Navy					26,098,258	27,942,776	6,747,792	34,690,568	32,386,619	3,849,854	36,236,473

Master Program Element Table of Contents (by Budget Activity then Line Item Number)

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
1	01	0601103N	University Research Initiatives	Volume 1 - 1
2	01	0601153N	Defense Research Sciences	Volume 1 - 13

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
3	02	0602114N	Power Proj Applied Research	Volume 1 - 195
4	02	0602123N	Force Protection Applied Res	Volume 1 - 209
5	02	0602131M	Marine Corps Lndg Force Tech	Volume 1 - 249
6	02	0602235N	Common Picture Applied Research	Volume 1 - 271
7	02	0602236N	Warfighter Sustainment Applied Res	Volume 1 - 291
8	02	0602271N	Electromagnetic Systems Applied Research	Volume 1 - 321
9	02	0602435N	Ocean Wrfghtg Env Applied Res	Volume 1 - 343
10	02	0602651M	JT Non-Lethal Wpns Applied Res	Volume 1 - 369

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
11	02	0602747N	Undersea Warfare Applied Res	Volume 1 - 375
12	02	0602750N	Future Naval Capabilities Applied Research	Volume 1 - 391
13	02	0602782N	Mine and Expeditionary Warfare Applied Research	Volume 1 - 479
14	02	0602792N	Innovative Naval Prototypes (INP) Applied Res	Volume 1 - 495
15	02	0602861N	Science & Tech Management - ONR Field Acts	Volume 1 - 521

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
16	03	0603123N	Force Protection Advanced Technology	Volume 1 - 529
17	03	0603271N	Electromagnetic Systems Advanced Technology	Volume 1 - 545
18	03	0603273N	Science & Technology for Nuclear Re-entry Systems	Volume 1 - 553
19	03	0603640M	MC Advanced Technology Demo	Volume 1 - 561
20	03	0603651M	JT Non-Lethal Wpns Tech Dev	Volume 1 - 611
21	03	0603673N	Future Naval Capabilities Advanced Tech Dev	Volume 1 - 617
22	03	0603680N	Manufacturing Technology Program	Volume 1 - 685
23	03	0603729N	Warfighter Protection Adv Tech	Volume 1 - 697

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
24	03	0603758N	Navy Warfighting Exp & Demo	Volume 1 - 703
25	03	0603782N	Mine and Expeditionary Warfare Advanced Technology	Volume 1 - 731
26	03	0603801N	Innovative Naval Prototypes (INP) Adv Tec Dev	Volume 1 - 737

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
27	04	0603128N	Unmanned Aerial System	Volume 2 - 1
28	04	0603178N	(U)LARGE UNMANNED SURFACE VESSELS (LUSVs)	Volume 2 - 15
29	04	0603207N	Air/Ocean Tactical Applications	Volume 2 - 31
30	04	0603216N	Aviation Survivability	Volume 2 - 103
31	04	0603239N	(U)NAVAL CONSTRUCTION FORCES	Volume 2 - 137
32	04	0603254N	ASW Systems Development	Volume 2 - 151
33	04	0603261N	Tactical Airborne Reconnaissance	Volume 2 - 165
34	04	0603382N	Advanced Combat Systems Tech	Volume 2 - 173
35	04	0603502N	Surface & Shallow Water MCM	Volume 2 - 199
36	04	0603506N	Surface Ship Torpedo Defense	Volume 2 - 221

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
37	04	0603512N	Carrier Systems Development	Volume 2 - 231
40	04	0603542N	Radiological Control	Volume 2 - 247
41	04	0603553N	Surface ASW	Volume 2 - 267
42	04	0603561N	Advanced Submarine System Development	Volume 2 - 275
43	04	0603562N	Submarine Tactical Warfare Sys	Volume 2 - 371
44	04	0603563N	Ship Concept Advanced Design	Volume 2 - 385
45	04	0603564N	Ship Prel Design & Feasibility Studies	Volume 2 - 451
47	04	0603573N	Advanced Surface Machinery Sys	Volume 2 - 503
49	04	0603581N	Littoral Combat Ship	Volume 2 - 529
50	04	0603582N	Combat System Integration	Volume 2 - 547
51	04	0603595N	SSBN New Design	Volume 2 - 569
52	04	0603596N	LCS Mission Modules	Volume 2 - 603
53	04	0603597N	(U)AUTOMATED TEST AND RE-TEST (ATRT)	Volume 2 - 625
54	04	0603598N	(U)ATRT ENTERPRISE RAPID DEVELOPMENT	Volume 2 - 641
55	04	0603599N	FRIGATE Development	Volume 2 - 667
56	04	0603609N	Conventional Munitions	Volume 2 - 689
57	04	0603635M	Marine Corps Grnd Cmbt/Supt Sys	Volume 2 - 711
58	04	0603654N	JNT Service EOD Development	Volume 2 - 749

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
59	04	0603713N	Ocean Engineering Tech Dev	Volume 2 - 785
60	04	0603721N	Environmental Protection	Volume 2 - 813
61	04	0603724N	Navy Energy Program	Volume 2 - 845
62	04	0603725N	Facilities Improvement	Volume 2 - 899
64	04	0603739N	Navy Logistic Productivity	Volume 2 - 921
69	04	0603790N	NATO Research and Deve	Volume 2 - 941
70	04	0603795N	Land Attack Tech	Volume 2 - 949
71	04	0603851M	Joint Non-Lethal Weapons Testing	Volume 2 - 957
72	04	0603860N	JNT Precision Approach & Ldg Sys	Volume 2 - 969
73	04	0603889N	Counterdrug RDT&E Projects	Volume 2 - 987
74	04	0603925N	Directed Energy and Electric Weapon System	Volume 2 - 993
75	04	0604014N	F/A-18 Infrared Search and Track (IRST)	Volume 2 - 1025
76	04	0604027N	Digital Warfare	Volume 2 - 1033
77	04	0604028N	Small/Medium Unmanned Undersea Vehicles	Volume 2 - 1043
79	04	0604030N	Rapid Prototyping, Experimentation & Dem	Volume 2 - 1087
80	04	0604031N	Large Unmanned Undersea Vehicles	Volume 2 - 1133
81	04	0604112N	GERALD R FORD CI NUC AIRCRAFT CARRIER CVN 78-80	Volume 2 - 1143
82	04	0604127N	Surface Mine Countermeasures	Volume 2 - 1165

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
83	04	0604272N	Tact Air Dir Infrared CM (TADIRCM)	Volume 2 - 1187
84	04	0604286N	(U)NAVY ADVANCED MANUFACTURING	Volume 2 - 1197
85	04	0604289M	Expeditionary Logistics	Volume 2 - 1205
86	04	0604292N	FUTURE VERTICAL LIFT (MARITIME STRIKE)	Volume 2 - 1213
87	04	0604295M	(U)MARINE AVIATION DEMONSTRATION/VALIDATION	Volume 2 - 1223
88	04	0604320M	Rapid Technology Capability Prototype	Volume 2 - 1241
89	04	0604454N	LX (R)	Volume 2 - 1259
90	04	0604536N	Advanced Undersea Prototyping	Volume 2 - 1269
92	04	0604636N	Counter Unmanned Aircraft System (C-UAS)	Volume 2 - 1305
93	04	0604659N	Precision Strike Weapons Development Program	Volume 2 - 1319
94	04	0604707N	SEW Architecture/Eng Support	Volume 2 - 1377
95	04	0604786N	Offensive Anti-Surface Warfare Weapon Dev	Volume 2 - 1387
96	04	0605512N	MEDIUM UNMANNED SURFACE VEHICLES (MUSVs)	Volume 2 - 1413
97	04	0605513N	UNMANNED SURFACE VEHICLE ENABLING CAPABILITIES	Volume 2 - 1425
98	04	0605514M	GROUND BASED ANTI-SHIP MISSILE	Volume 2 - 1465
99	04	0605516M	LONG RANGE FIRES	Volume 2 - 1485
100	04	0605518N	CONVENTIONAL PROMPT STRIKE (CPS)	Volume 2 - 1491
101	04	0105519N	(U)Nuclear-Armed Sea-Launched Cruise Missile Spt	Volume 2 - 1525

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
102	04	0207147M	(U) COLLABORATIVE COMBAT AIRCRAFT	Volume 2 - 1531
104	04	0303354N	ASW Systems Development - MIP	Volume 2 - 1541
105	04	0304240M	Advanced Tactical Unmanned Aircraft System	Volume 2 - 1551
106	04	0304270N	Electronic Warfare Development - MIP	Volume 2 - 1559
107	04	0304797N	(U)UNDERSEA ARTIFICIAL INTEL/MACHINE LEARNING	Volume 2 - 1567

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
108	05	0603208N	Training System Aircraft	Volume 3 - 1
110	05	0604212N	Other Helicopter Development	Volume 3 - 23
111	05	0604214M	AV-8B Aircraft - Engine Dev	Volume 3 - 31
112	05	0604215N	Standards Development	Volume 3 - 41
113	05	0604216N	Multi-Mission Helicopter Upgrade Dev	Volume 3 - 51
114	05	0604230N	Warfare Support System	Volume 3 - 79
115	05	0604231N	COMMAND AND CONTROL	Volume 3 - 141
116	05	0604234N	Advanced Hawkeye	Volume 3 - 207

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
117	05	0604245M	H-1 UPGRADES	Volume 3 - 229
118	05	0604261N	Acoustic Search Sensors	Volume 3 - 241
119	05	0604262N	V-22A	Volume 3 - 259
120	05	0604264N	Air Crew Systems Development	Volume 3 - 299
121	05	0604269N	EA-18 Squadrons	Volume 3 - 323
122	05	0604270N	Electronic Warfare (EW) Dev	Volume 3 - 339
123	05	0604273M	Executive Helo Development	Volume 3 - 399
124	05	0604274N	Next Generation Jammer (NGJ)	Volume 3 - 409
125	05	0604280N	JT TACTICAL RADIO SYSTEM (JTRS)	Volume 3 - 419
126	05	0604282N	NEXT GENERATION JAMMER (NGJ) INC II	Volume 3 - 539
127	05	0604307N	Surface Combatant Cmbt Sys Eng	Volume 3 - 553
128	05	0604329N	Small Diameter Bomb (SDB)	Volume 3 - 629
129	05	0604366N	Standard Missile Improvements	Volume 3 - 641
130	05	0604373N	Airborne Mine Countermeasures	Volume 3 - 681
131	05	0604378N	Nav Integrated Fire Control - Counter Air Sys E	Volume 3 - 701
132	05	0604501N	Advanced Above Water Sensors	Volume 3 - 729
133	05	0604503N	Submarine SWFTS Modernization	Volume 3 - 749
134	05	0604504N	Air Control	Volume 3 - 789

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
135	05	0604512N	Shipboard Aviation Systems	Volume 3 - 821
136	05	0604516N	Ship Survivability	Volume 3 - 835
137	05	0604518N	Combat Information Center Conv	Volume 3 - 841
138	05	0604522N	Air & Missile Defense Radar (AMDR) System	Volume 3 - 859
139	05	0604530N	Advanced Arresting Gear (AAG)	Volume 3 - 881
140	05	0604558N	New Design SSN	Volume 3 - 897
141	05	0604562N	Submarine Tactical Warfare System	Volume 3 - 925
142	05	0604567N	Ship Contract Design/ Live Fire T&E	Volume 3 - 935
143	05	0604574N	Navy Tactical Computer Resources	Volume 3 - 957
144	05	0604601N	Mine Development	Volume 3 - 969
145	05	0604610N	Lightweight Torpedo Development	Volume 3 - 1001
146	05	0604654N	JNT Service EOD	Volume 3 - 1025
147	05	0604657M	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST	Volume 3 - 1033
148	05	0604703N	Personnel, Trng, Sim, & Human Factors	Volume 3 - 1041
149	05	0604727N	JNT Standoff Weapon Systems	Volume 3 - 1057
150	05	0604755N	Ship Self Def (Detect & Cntrl)	Volume 3 - 1067
151	05	0604756N	Ship Self Def (Engage: Hard Kill)	Volume 3 - 1103
152	05	0604757N	Ship Self Def (Engage: Soft Kill/EW)	Volume 3 - 1145

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
154	05	0604771N	Medical Development	Volume 3 - 1203
155	05	0604777N	Navigation/Id System	Volume 3 - 1221
156	05	0604850N	SSN(X)	Volume 3 - 1247
157	05	0605013M	Marine Corps IT Dev/Mod	Volume 3 - 1257
158	05	0605013N	Information Technology Development	Volume 3 - 1269
159	05	0605024N	Anti-Tamper Technology Support	Volume 3 - 1421
160	05	0605180N	TACAMO MODERNIZATION	Volume 3 - 1433
161	05	0605212M	CH-53K	Volume 3 - 1445
162	05	0605215N	Mission Planning	Volume 3 - 1463
163	05	0605217N	Common Avionics	Volume 3 - 1493
164	05	0605220N	Ship-to-Shore Connector (SSC)	Volume 3 - 1529
166	05	0605414N	Unmanned Carrier Aviation (UCA)	Volume 3 - 1547
167	05	0605450M	Joint Air-to-ground Missile (JAGM)	Volume 3 - 1575
168	05	0605500N	Multi-Mission Maritime Aircraft (MMA) (P-8A)	Volume 3 - 1597
169	05	0605504N	Multi-Mission Maritime (MMA) Inc III	Volume 3 - 1609
171	05	0605611M	MC AVS Development & Demonstration	Volume 3 - 1621
172	05	0605813M	Joint Light Tactical Veh (JLTV) Sys Dev & Dem	Volume 3 - 1641
173	05	0204202N	DDG-1000	Volume 3 - 1651

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
174	05	0301377N	(U)Countering Advanced Conventional Weapons (CACW)	Volume 3 - 1667
175	05	0302315N	Non-Kinetic Countermeasure Support	Volume 3 - 1673
181	05	0304785N	ISR & INFO OPERATIONS	Volume 3 - 1679
183	05	0306250M	Cyber Operations Technology Development	Volume 3 - 1755

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
184	06	0604256N	Threat Simulator Development	Volume 4 - 1
185	06	0604258N	Target Systems Development	Volume 4 - 13
186	06	0604759N	Major T&E Investment	Volume 4 - 27
187	06	0605152N	Studies & Analysis Supt - Navy	Volume 4 - 35
188	06	0605154N	Center For Naval Analyses	Volume 4 - 41
189	06	0605502N	Small Business Innovative Research	Volume 4 - 49
190	06	0605804N	Technical Information Services	Volume 4 - 77
191	06	0605853N	Management, Technical & Intl Supt	Volume 4 - 83
192	06	0605856N	Strategic Technical Support	Volume 4 - 125

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
193	06	0605863N	RDT&E Ship & Aircraft Support	Volume 4 - 131
194	06	0605864N	Test & Evaluation Support	Volume 4 - 149
195	06	0605865N	Operational Test & Eval Capability	Volume 4 - 179
196	06	0605866N	Navy Space & Electr Warfare Supt	Volume 4 - 187
198	06	0605873M	Marine Corps Program Wide Supt	Volume 4 - 197
199	06	0605898N	Management HQ - R&D	Volume 4 - 213
200	06	0606295M	(U)MARINE AVIATION DEVEL MANAGEMENT & SUPPORT	Volume 4 - 225
201	06	0606355N	Warfare Innovation Management	Volume 4 - 231
202	06	0606942N	Assessments & Evals Cyber Vulnerabilities	Volume 4 - 243
203	06	0305327N	Insider Threat	Volume 4 - 249
204	06	0902498N	Management HQ - Departmental Spt Acts	Volume 4 - 253
205	06	0909980N	Judgment Fund Reimbursement	Volume 4 - 257
206	06	0909999N	Cancelled Account Adjustments	Volume 4 - 259

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
208	07	0604840M	F-35B C2D2	Volume 5 - 1
209	07	0604840N	F-35C C2D2	Volume 5 - 87
210	07	0605520M	MARINE CORPS AIR DEFENSE WEAPONS SYS	Volume 5 - 175
211	07	0607658N	Cooperative Engagement Capability	Volume 5 - 221
212	07	0101221N	Strategic Sub & Wpns Sys Supt	Volume 5 - 259
214	07	0101226N	Submarine Acoustic War Dev	Volume 5 - 309
215	07	0101402N	Navy Strategic Comms	Volume 5 - 339
216	07	0204136N	F/A-18 Squadrons	Volume 5 - 353
217	07	0204228N	(U)SURFACE SUPPORT	Volume 5 - 421
218	07	0204229N	Tomahawk Mssn Planning Ctr	Volume 5 - 431
219	07	0204311N	Integrated Surveillance System	Volume 5 - 477
220	07	0204313N	Ship-Towed Array Surveillance Systems	Volume 5 - 505
221	07	0204413N	Amphibious Tactical Supt Units	Volume 5 - 513
222	07	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	Volume 5 - 527
223	07	0204571N	Consolidated Trng Sys Dev	Volume 5 - 543
224	07	0204575N	Elect Warfare Readiness Supt	Volume 5 - 605

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
225	07	0205601N	ANTI-RADIATION MISSILE IMPROVEMENT	Volume 5 - 625
226	07	0205620N	Surface ASW Cmbt Sys Integr	Volume 5 - 653
227	07	0205632N	MK-48 ADCAP	Volume 5 - 669
228	07	0205633N	Aviation Improvements	Volume 5 - 681
230	07	0206313M	Marine Corps Comms Systems	Volume 5 - 747
231	07	0206335M	Common Aviation Command and Control Sys (CAC2S)	Volume 5 - 899
232	07	0206623M	MC Ground Cmbt Spt Arms Sys	Volume 5 - 911
233	07	0206624M	Marine Corps Cmbt Services Supt	Volume 5 - 1041
234	07	0206625M	USMC Intelligence/Electronics Warfare Sys	Volume 5 - 1079
235	07	0207161N	Tactical Aim Missiles	Volume 5 - 1149
236	07	0207163N	AMRAAM	Volume 5 - 1163
237	07	0207255N	MQ-25 STINGRAY	Volume 5 - 1173
238	07	0208043N	PLANNING AND DECISION AID SYSTEM (PDAS)	Volume 5 - 1197
242	07	0303138N	AFLOAT NETWORKS	Volume 5 - 1205
243	07	0303140N	Information Sys Security Program	Volume 5 - 1233
245	07	0305205N	UAS Integration & Interoperability	Volume 5 - 1269
246	07	0305208M	Distributed Common Ground/Surface Systems	Volume 5 - 1275
247	07	0305220N	MQ-4C Triton	Volume 5 - 1301

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
248	07	0305232M	RQ-11 UAV	Volume 5 - 1311
250	07	0305242M	Unmanned Aerial Systems (UAS) Payloads	Volume 5 - 1325
251	07	0305421N	RQ-4 Modernization	Volume 5 - 1337
252	07	0307577N	Intelligence Mission Data (IMD)	Volume 5 - 1357
253	07	0308601N	Modeling & Simulation Support	Volume 5 - 1367
254	07	0702207N	Depot Maintenance (NON-IF)	Volume 5 - 1389
255	07	0708730N	Maritime Tech (MARITECH)	Volume 5 - 1413

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
256	08	0608013N	RISK MANAGMEMENT INFO - SOFTWARE PILOT PROGRAM	Volume 5 - 1419
257	08	0608231N	MARITIME TACT CMD & CONTROL - SOFT PLT PRGM	Volume 5 - 1429

THIS PAGE INTENTIONALLY LEFT BLANK

Master Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line #	BA	Page
(U) COLLABORATIVE COMBAT AIRCRAFT	0207147M	102	04	Volume 2 - 1531
(U)ATRT ENTERPRISE RAPID DEVELOPMENT	0603598N	54	04	Volume 2 - 641
(U)AUTOMATED TEST AND RE-TEST (ATRT)	0603597N	53	04	Volume 2 - 625
(U)Countering Advanced Conventional Weapons (CACW)	0301377N	174	05	Volume 3 - 1667
(U)LARGE UNMANNED SURFACE VESSELS (LUSVs)	0603178N	28	04	Volume 2 - 15
(U)MARINE AVIATION DEMONSTRATION/VALIDATION	0604295M	87	04	Volume 2 - 1223
(U)MARINE AVIATION DEVEL MANAGEMENT & SUPPORT	0606295M	200	06	Volume 4 - 225
(U)NAVAL CONSTRUCTION FORCES	0603239N	31	04	Volume 2 - 137
(U)NAVY ADVANCED MANUFACTURING	0604286N	84	04	Volume 2 - 1197
(U)Nuclear-Armed Sea-Launched Cruise Missile Spt	0105519N	101	04	Volume 2 - 1525
(U)SURFACE SUPPORT	0204228N	217	07	Volume 5 - 421
(U)UNDERSEA ARTIFICIAL INTEL/MACHINE LEARNING	0304797N	107	04	Volume 2 - 1567
AFLOAT NETWORKS	0303138N	242	07	Volume 5 - 1205
AMRAAM	0207163N	236	07	Volume 5 - 1163
ANTI-RADIATION MISSILE IMPROVEMENT	0205601N	225	07	Volume 5 - 625
ASW Systems Development	0603254N	32	04	Volume 2 - 151
ASW Systems Development - MIP	0303354N	104	04	Volume 2 - 1541

Program Element Title	Program Element Number	Line #	BA	Page
AV-8B Aircraft - Engine Dev	0604214M	111	05	Volume 3 - 31
Acoustic Search Sensors	0604261N	118	05	Volume 3 - 241
Advanced Above Water Sensors	0604501N	132	05	Volume 3 - 729
Advanced Arresting Gear (AAG)	0604530N	139	05	Volume 3 - 881
Advanced Combat Systems Tech	0603382N	34	04	Volume 2 - 173
Advanced Hawkeye	0604234N	116	05	Volume 3 - 207
Advanced Submarine System Development	0603561N	42	04	Volume 2 - 275
Advanced Surface Machinery Sys	0603573N	47	04	Volume 2 - 503
Advanced Tactical Unmanned Aircraft System	0304240M	105	04	Volume 2 - 1551
Advanced Undersea Prototyping	0604536N	90	04	Volume 2 - 1269
Air & Missile Defense Radar (AMDR) System	0604522N	138	05	Volume 3 - 859
Air Control	0604504N	134	05	Volume 3 - 789
Air Crew Systems Development	0604264N	120	05	Volume 3 - 299
Air/Ocean Tactical Applications	0603207N	29	04	Volume 2 - 31
Airborne Mine Countermeasures	0604373N	130	05	Volume 3 - 681
Amphibious Tactical Supt Units	0204413N	221	07	Volume 5 - 513
Anti-Tamper Technology Support	0605024N	159	05	Volume 3 - 1421
Assessments & Evals Cyber Vulnerabilities	0606942N	202	06	Volume 4 - 243
Aviation Improvements	0205633N	228	07	Volume 5 - 681

Program Element Title	Program Element Number	Line #	BA	Page
Aviation Survivability	0603216N	30	04	Volume 2 - 103
CH-53K	0605212M	161	05	Volume 3 - 1445
COMMAND AND CONTROL	0604231N	115	05	Volume 3 - 141
CONVENTIONAL PROMPT STRIKE (CPS)	0605518N	100	04	Volume 2 - 1491
Cancelled Account Adjustments	0909999N	206	06	Volume 4 - 259
Carrier Systems Development	0603512N	37	04	Volume 2 - 231
Center For Naval Analyses	0605154N	188	06	Volume 4 - 41
Combat Information Center Conv	0604518N	137	05	Volume 3 - 841
Combat System Integration	0603582N	50	04	Volume 2 - 547
Common Aviation Command and Control Sys (CAC2S)	0206335M	231	07	Volume 5 - 899
Common Avionics	0605217N	163	05	Volume 3 - 1493
Common Picture Applied Research	0602235N	6	02	Volume 1 - 271
Consolidated Trng Sys Dev	0204571N	223	07	Volume 5 - 543
Conventional Munitions	0603609N	56	04	Volume 2 - 689
Cooperative Engagement Capability	0607658N	211	07	Volume 5 - 221
Counter Unmanned Aircraft System (C-UAS)	0604636N	92	04	Volume 2 - 1305
Counterdrug RDT&E Projects	0603889N	73	04	Volume 2 - 987
Cyber Operations Technology Development	0306250M	183	05	Volume 3 - 1755
DDG-1000	0204202N	173	05	Volume 3 - 1651

Program Element Title	Program Element Number	Line #	BA	Page
Defense Research Sciences	0601153N	2	01	Volume 1 - 13
Depot Maintenance (NON-IF)	0702207N	254	07	Volume 5 - 1389
Digital Warfare	0604027N	76	04	Volume 2 - 1033
Directed Energy and Electric Weapon System	0603925N	74	04	Volume 2 - 993
Distributed Common Ground/Surface Systems	0305208M	246	07	Volume 5 - 1275
EA-18 Squadrons	0604269N	121	05	Volume 3 - 323
Elect Warfare Readiness Supt	0204575N	224	07	Volume 5 - 605
Electromagnetic Systems Advanced Technology	0603271N	17	03	Volume 1 - 545
Electromagnetic Systems Applied Research	0602271N	8	02	Volume 1 - 321
Electronic Warfare (EW) Dev	0604270N	122	05	Volume 3 - 339
Electronic Warfare Development - MIP	0304270N	106	04	Volume 2 - 1559
Environmental Protection	0603721N	60	04	Volume 2 - 813
Executive Helo Development	0604273M	123	05	Volume 3 - 399
Expeditionary Logistics	0604289M	85	04	Volume 2 - 1205
F-35B C2D2	0604840M	208	07	Volume 5 - 1
F-35C C2D2	0604840N	209	07	Volume 5 - 87
F/A-18 Infrared Search and Track (IRST)	0604014N	75	04	Volume 2 - 1025
F/A-18 Squadrons	0204136N	216	07	Volume 5 - 353
FRIGATE Development	0603599N	55	04	Volume 2 - 667

Program Element Title	Program Element Number	Line #	BA	Page
FUTURE VERTICAL LIFT (MARITIME STRIKE)	0604292N	86	04	Volume 2 - 1213
Facilities Improvement	0603725N	62	04	Volume 2 - 899
Force Protection Advanced Technology	0603123N	16	03	Volume 1 - 529
Force Protection Applied Res	0602123N	4	02	Volume 1 - 209
Future Naval Capabilities Advanced Tech Dev	0603673N	21	03	Volume 1 - 617
Future Naval Capabilities Applied Research	0602750N	12	02	Volume 1 - 391
GERALD R FORD CI NUC AIRCRAFT CARRIER CVN 78-80	0604112N	81	04	Volume 2 - 1143
GROUND BASED ANTI-SHIP MISSILE	0605514M	98	04	Volume 2 - 1465
Ground/Air Task Oriented Radar (G/ATOR)	0204460M	222	07	Volume 5 - 527
H-1 UPGRADES	0604245M	117	05	Volume 3 - 229
ISR & INFO OPERATIONS	0304785N	181	05	Volume 3 - 1679
Information Sys Security Program	0303140N	243	07	Volume 5 - 1233
Information Technology Development	0605013N	158	05	Volume 3 - 1269
Innovative Naval Prototypes (INP) Adv Tec Dev	0603801N	26	03	Volume 1 - 737
Innovative Naval Prototypes (INP) Applied Res	0602792N	14	02	Volume 1 - 495
Insider Threat	0305327N	203	06	Volume 4 - 249
Integrated Surveillance System	0204311N	219	07	Volume 5 - 477
Intelligence Mission Data (IMD)	0307577N	252	07	Volume 5 - 1357
JNT Precision Approach & Ldg Sys	0603860N	72	04	Volume 2 - 969

Program Element Title	Program Element Number	Line #	BA	Page
JNT Service EOD	0604654N	146	05	Volume 3 - 1025
JNT Service EOD Development	0603654N	58	04	Volume 2 - 749
JNT Standoff Weapon Systems	0604727N	149	05	Volume 3 - 1057
JT Non-Lethal Wpns Applied Res	0602651M	10	02	Volume 1 - 369
JT Non-Lethal Wpns Tech Dev	0603651M	20	03	Volume 1 - 611
JT TACTICAL RADIO SYSTEM (JTRS)	0604280N	125	05	Volume 3 - 419
Joint Air-to-ground Missile (JAGM)	0605450M	167	05	Volume 3 - 1575
Joint Light Tactical Veh (JLTV) Sys Dev & Dem	0605813M	172	05	Volume 3 - 1641
Joint Non-Lethal Weapons Testing	0603851M	71	04	Volume 2 - 957
Judgment Fund Reimbursement	0909980N	205	06	Volume 4 - 257
LCS Mission Modules	0603596N	52	04	Volume 2 - 603
LONG RANGE FIRES	0605516M	99	04	Volume 2 - 1485
LX (R)	0604454N	89	04	Volume 2 - 1259
Land Attack Tech	0603795N	70	04	Volume 2 - 949
Large Unmanned Undersea Vehicles	0604031N	80	04	Volume 2 - 1133
Lightweight Torpedo Development	0604610N	145	05	Volume 3 - 1001
Littoral Combat Ship	0603581N	49	04	Volume 2 - 529
MARINE CORPS AIR DEFENSE WEAPONS SYS	0605520M	210	07	Volume 5 - 175
MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYST	0604657M	147	05	Volume 3 - 1033

Program Element Title	Program Element Number	Line #	BA	Page
MARITIME TACT CMD & CONTROL - SOFT PLT PRGM	0608231N	257	08	Volume 5 - 1429
MC AVS Development & Demonstration	0605611M	171	05	Volume 3 - 1621
MC Advanced Technology Demo	0603640M	19	03	Volume 1 - 561
MC Ground Cmbt Spt Arms Sys	0206623M	232	07	Volume 5 - 911
MEDIUM UNMANNED SURFACE VEHICLES (MUSVs)	0605512N	96	04	Volume 2 - 1413
MK-48 ADCAP	0205632N	227	07	Volume 5 - 669
MQ-25 STINGRAY	0207255N	237	07	Volume 5 - 1173
MQ-4C Triton	0305220N	247	07	Volume 5 - 1301
Major T&E Investment	0604759N	186	06	Volume 4 - 27
Management HQ - Departmental Spt Acts	0902498N	204	06	Volume 4 - 253
Management HQ - R&D	0605898N	199	06	Volume 4 - 213
Management, Technical & Intl Supt	0605853N	191	06	Volume 4 - 83
Manufacturing Technology Program	0603680N	22	03	Volume 1 - 685
Marine Corps Cmbt Services Supt	0206624M	233	07	Volume 5 - 1041
Marine Corps Comms Systems	0206313M	230	07	Volume 5 - 747
Marine Corps Grnd Cmbt/Supt Sys	0603635M	57	04	Volume 2 - 711
Marine Corps IT Dev/Mod	0605013M	157	05	Volume 3 - 1257
Marine Corps Lndg Force Tech	0602131M	5	02	Volume 1 - 249
Marine Corps Program Wide Supt	0605873M	198	06	Volume 4 - 197

Program Element Title	Program Element Number	Line #	BA	Page
Maritime Tech (MARITECH)	0708730N	255	07	Volume 5 - 1413
Medical Development	0604771N	154	05	Volume 3 - 1203
Mine Development	0604601N	144	05	Volume 3 - 969
Mine and Expeditionary Warfare Advanced Technology	0603782N	25	03	Volume 1 - 731
Mine and Expeditionary Warfare Applied Research	0602782N	13	02	Volume 1 - 479
Mission Planning	0605215N	162	05	Volume 3 - 1463
Modeling & Simulation Support	0308601N	253	07	Volume 5 - 1367
Multi-Mission Helicopter Upgrade Dev	0604216N	113	05	Volume 3 - 51
Multi-Mission Maritime (MMA) Inc III	0605504N	169	05	Volume 3 - 1609
Multi-Mission Maritime Aircraft (MMA) (P-8A)	0605500N	168	05	Volume 3 - 1597
NATO Research and Deve	0603790N	69	04	Volume 2 - 941
NEXT GENERATION JAMMER (NGJ) INC II	0604282N	126	05	Volume 3 - 539
Nav Integrated Fire Control - Counter Air Sys E	0604378N	131	05	Volume 3 - 701
Navigation/Id System	0604777N	155	05	Volume 3 - 1221
Navy Energy Program	0603724N	61	04	Volume 2 - 845
Navy Logistic Productivity	0603739N	64	04	Volume 2 - 921
Navy Space & Electr Warfare Supt	0605866N	196	06	Volume 4 - 187
Navy Strategic Comms	0101402N	215	07	Volume 5 - 339
Navy Tactical Computer Resources	0604574N	143	05	Volume 3 - 957

Program Element Title	Program Element Number	Line #	BA	Page
Navy Warfighting Exp & Demo	0603758N	24	03	Volume 1 - 703
New Design SSN	0604558N	140	05	Volume 3 - 897
Next Generation Jammer (NGJ)	0604274N	124	05	Volume 3 - 409
Non-Kinetic Countermeasure Support	0302315N	175	05	Volume 3 - 1673
Ocean Engineering Tech Dev	0603713N	59	04	Volume 2 - 785
Ocean Wrfghtg Env Applied Res	0602435N	9	02	Volume 1 - 343
Offensive Anti-Surface Warfare Weapon Dev	0604786N	95	04	Volume 2 - 1387
Operational Test & Eval Capability	0605865N	195	06	Volume 4 - 179
Other Helicopter Development	0604212N	110	05	Volume 3 - 23
PLANNING AND DECISION AID SYSTEM (PDAS)	0208043N	238	07	Volume 5 - 1197
Personnel, Trng, Sim, & Human Factors	0604703N	148	05	Volume 3 - 1041
Power Proj Applied Research	0602114N	3	02	Volume 1 - 195
Precision Strike Weapons Development Program	0604659N	93	04	Volume 2 - 1319
RDT&E Ship & Aircraft Support	0605863N	193	06	Volume 4 - 131
RISK MANAGMEMENT INFO - SOFTWARE PILOT PROGRAM	0608013N	256	08	Volume 5 - 1419
RQ-11 UAV	0305232M	248	07	Volume 5 - 1311
RQ-4 Modernization	0305421N	251	07	Volume 5 - 1337
Radiological Control	0603542N	40	04	Volume 2 - 247
Rapid Prototyping, Experimentation & Dem	0604030N	79	04	Volume 2 - 1087

Program Element Title	Program Element Number	Line #	BA	Page
Rapid Technology Capability Prototype	0604320M	88	04	Volume 2 - 1241
SEW Architecture/Eng Support	0604707N	94	04	Volume 2 - 1377
SSBN New Design	0603595N	51	04	Volume 2 - 569
SSN(X)	0604850N	156	05	Volume 3 - 1247
Science & Tech Management - ONR Field Acts	0602861N	15	02	Volume 1 - 521
Science & Technology for Nuclear Re-entry Systems	0603273N	18	03	Volume 1 - 553
Ship Concept Advanced Design	0603563N	44	04	Volume 2 - 385
Ship Contract Design/ Live Fire T&E	0604567N	142	05	Volume 3 - 935
Ship Prel Design & Feasibility Studies	0603564N	45	04	Volume 2 - 451
Ship Self Def (Detect & Cntrl)	0604755N	150	05	Volume 3 - 1067
Ship Self Def (Engage: Hard Kill)	0604756N	151	05	Volume 3 - 1103
Ship Self Def (Engage: Soft Kill/EW)	0604757N	152	05	Volume 3 - 1145
Ship Survivability	0604516N	136	05	Volume 3 - 835
Ship-Towed Array Surveillance Systems	0204313N	220	07	Volume 5 - 505
Ship-to-Shore Connector (SSC)	0605220N	164	05	Volume 3 - 1529
Shipboard Aviation Systems	0604512N	135	05	Volume 3 - 821
Small Business Innovative Research	0605502N	189	06	Volume 4 - 49
Small Diameter Bomb (SDB)	0604329N	128	05	Volume 3 - 629
Small/Medium Unmanned Undersea Vehicles	0604028N	77	04	Volume 2 - 1043

Program Element Title	Program Element Number	Line #	BA	Page
Standard Missile Improvements	0604366N	129	05	Volume 3 - 641
Standards Development	0604215N	112	05	Volume 3 - 41
Strategic Sub & Wpns Sys Supt	0101221N	212	07	Volume 5 - 259
Strategic Technical Support	0605856N	192	06	Volume 4 - 125
Studies & Analysis Supt - Navy	0605152N	187	06	Volume 4 - 35
Submarine Acoustic War Dev	0101226N	214	07	Volume 5 - 309
Submarine SWFTS Modernization	0604503N	133	05	Volume 3 - 749
Submarine Tactical Warfare Sys	0603562N	43	04	Volume 2 - 371
Submarine Tactical Warfare System	0604562N	141	05	Volume 3 - 925
Surface & Shallow Water MCM	0603502N	35	04	Volume 2 - 199
Surface ASW	0603553N	41	04	Volume 2 - 267
Surface ASW Cmbt Sys Integr	0205620N	226	07	Volume 5 - 653
Surface Combatant Cmbt Sys Eng	0604307N	127	05	Volume 3 - 553
Surface Mine Countermeasures	0604127N	82	04	Volume 2 - 1165
Surface Ship Torpedo Defense	0603506N	36	04	Volume 2 - 221
TACAMO MODERNIZATION	0605180N	160	05	Volume 3 - 1433
Tact Air Dir Infrared CM (TADIRCM)	0604272N	83	04	Volume 2 - 1187
Tactical Aim Missiles	0207161N	235	07	Volume 5 - 1149
Tactical Airborne Reconnaissance	0603261N	33	04	Volume 2 - 165

Program Element Title	Program Element Number	Line #	BA	Page
Target Systems Development	0604258N	185	06	Volume 4 - 13
Technical Information Services	0605804N	190	06	Volume 4 - 77
Test & Evaluation Support	0605864N	194	06	Volume 4 - 149
Threat Simulator Development	0604256N	184	06	Volume 4 - 1
Tomahawk Mssn Planning Ctr	0204229N	218	07	Volume 5 - 431
Training System Aircraft	0603208N	108	05	Volume 3 - 1
UAS Integration & Interoperability	0305205N	245	07	Volume 5 - 1269
UNMANNED SURFACE VEHICLE ENABLING CAPABILITIES	0605513N	97	04	Volume 2 - 1425
USMC Intelligence/Electronics Warfare Sys	0206625M	234	07	Volume 5 - 1079
Undersea Warfare Applied Res	0602747N	11	02	Volume 1 - 375
University Research Initiatives	0601103N	1	01	Volume 1 - 1
Unmanned Aerial System	0603128N	27	04	Volume 2 - 1
Unmanned Aerial Systems (UAS) Payloads	0305242M	250	07	Volume 5 - 1325
Unmanned Carrier Aviation (UCA)	0605414N	166	05	Volume 3 - 1547
V-22A	0604262N	119	05	Volume 3 - 259
Warfare Innovation Management	0606355N	201	06	Volume 4 - 231
Warfare Support System	0604230N	114	05	Volume 3 - 79
Warfighter Protection Adv Tech	0603729N	23	03	Volume 1 - 697
Warfighter Sustainment Applied Res	0602236N	7	02	Volume 1 - 291

Program Element Table of Contents (by Budget Activity then Line Item Number)

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
1	01	0601103N	University Research Initiatives	Volume 1 - 1
2	01	0601153N	Defense Research Sciences	Volume 1 - 13

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
3	02	0602114N	Power Proj Applied Research	Volume 1 - 195
4	02	0602123N	Force Protection Applied Res	Volume 1 - 209
5	02	0602131M	Marine Corps Lndg Force Tech	Volume 1 - 249
6	02	0602235N	Common Picture Applied Research	Volume 1 - 271
7	02	0602236N	Warfighter Sustainment Applied Res	Volume 1 - 291
8	02	0602271N	Electromagnetic Systems Applied Research	Volume 1 - 321
9	02	0602435N	Ocean Wrfghtg Env Applied Res	Volume 1 - 343
10	02	0602651M	JT Non-Lethal Wpns Applied Res	Volume 1 - 369

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
11	02	0602747N	Undersea Warfare Applied Res	Volume 1 - 375
12	02	0602750N	Future Naval Capabilities Applied Research	Volume 1 - 391
13	02	0602782N	Mine and Expeditionary Warfare Applied Research	Volume 1 - 479
14	02	0602792N	Innovative Naval Prototypes (INP) Applied Res	Volume 1 - 495
15	02	0602861N	Science & Tech Management - ONR Field Acts	Volume 1 - 521

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
16	03	0603123N	Force Protection Advanced Technology	Volume 1 - 529
17	03	0603271N	Electromagnetic Systems Advanced Technology	Volume 1 - 545
18	03	0603273N	Science & Technology for Nuclear Re-entry Systems	Volume 1 - 553
19	03	0603640M	MC Advanced Technology Demo	Volume 1 - 561
20	03	0603651M	JT Non-Lethal Wpns Tech Dev	Volume 1 - 611
21	03	0603673N	Future Naval Capabilities Advanced Tech Dev	Volume 1 - 617
22	03	0603680N	Manufacturing Technology Program	Volume 1 - 685
23	03	0603729N	Warfighter Protection Adv Tech	Volume 1 - 697

Appropriation 1319: Research, Development, Test & Evaluation, Navy

Line #	Budget Activity	Program Element Number	Program Element Title	Page
24	03	0603758N	Navy Warfighting Exp & Demo	Volume 1 - 703
25	03	0603782N	Mine and Expeditionary Warfare Advanced Technology	Volume 1 - 731
26	03	0603801N	Innovative Naval Prototypes (INP) Adv Tec Dev	Volume 1 - 737

THIS PAGE INTENTIONALLY LEFT BLANK

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line #	BA	Page
Common Picture Applied Research	0602235N	6	02	Volume 1 - 271
Defense Research Sciences	0601153N	2	01	Volume 1 - 13
Electromagnetic Systems Advanced Technology	0603271N	17	03	Volume 1 - 545
Electromagnetic Systems Applied Research	0602271N	8	02	Volume 1 - 321
Force Protection Advanced Technology	0603123N	16	03	Volume 1 - 529
Force Protection Applied Res	0602123N	4	02	Volume 1 - 209
Future Naval Capabilities Advanced Tech Dev	0603673N	21	03	Volume 1 - 617
Future Naval Capabilities Applied Research	0602750N	12	02	Volume 1 - 391
Innovative Naval Prototypes (INP) Adv Tec Dev	0603801N	26	03	Volume 1 - 737
Innovative Naval Prototypes (INP) Applied Res	0602792N	14	02	Volume 1 - 495
JT Non-Lethal Wpns Applied Res	0602651M	10	02	Volume 1 - 369
JT Non-Lethal Wpns Tech Dev	0603651M	20	03	Volume 1 - 611
MC Advanced Technology Demo	0603640M	19	03	Volume 1 - 561
Manufacturing Technology Program	0603680N	22	03	Volume 1 - 685
Marine Corps Lndg Force Tech	0602131M	5	02	Volume 1 - 249
Mine and Expeditionary Warfare Advanced Technology	0603782N	25	03	Volume 1 - 731
Mine and Expeditionary Warfare Applied Research	0602782N	13	02	Volume 1 - 479

Program Element Title	Program Element Number	Line #	BA	Page
Navy Warfighting Exp & Demo	0603758N	24	03	Volume 1 - 703
Ocean Wrfghtg Env Applied Res	0602435N	9	02	Volume 1 - 343
Power Proj Applied Research	0602114N	3	02	Volume 1 - 195
Science & Tech Management - ONR Field Acts	0602861N	15	02	Volume 1 - 521
Science & Technology for Nuclear Re-entry Systems	0603273N	18	03	Volume 1 - 553
Undersea Warfare Applied Res	0602747N	11	02	Volume 1 - 375
University Research Initiatives	0601103N	1	01	Volume 1 - 1
Warfighter Protection Adv Tech	0603729N	23	03	Volume 1 - 697
Warfighter Sustainment Applied Res	0602236N	7	02	Volume 1 - 291

Executive Summary for Research, Development, Test and Evaluation, Navy

Table 1: Funding Overview

	FY 2025 ($K)	FY 2026 ($K)	FY 2027 ($K)
Discretionary	26,098,258	27,942,776	32,386,619
Mandatory	7,030	6,747,792	3,849,854
Total	**26,105,288**	**34,690,568**	**36,236,473**

Table 2: Detailed Mandatory Breakout

BLI	Reconciliation Bin Title	FY 2025 ($K)	FY 2026 ($K)	FY 2027 ($K)
0604840M	Air Superiority	$ -	$ -	$ 682,443
0604840N	Air Superiority	$ -	$ -	$ 619,457
0605285N	Air Superiority	$ -	$ -	$ 72,115
0604545N	Maritime Superiority	$ -	$ -	$ 1,850,000
0604840M	Munitions	$ -	$ -	$ 105,336
0604840N	Munitions	$ -	$ -	$ 69,462
0605518N	Munitions	$ -	$ -	$ 451,041
0101226N	Munitions and Supply Chain	$ -	$ 55,000	$ -
0101226N	Shipbuilding	$ -	$ 8,700	$ -
0105519N	Nuclear	$ -	$ 1,677,309	$ -
0204229N	Munitions and Supply Chain	$ -	$ 80,175	$ -
0204413N	Shipbuilding	$ -	$ 1,679	$ -
0206313M	Low-Cost Weapons	$ 7,030	$ -	$ -
0205632N	Munitions and Supply Chain	$ -	$ 180,000	$ -
0206624M	Shipbuilding	$ -	$ 10,531	$ -
0207147M	Air Superiority	$ -	$ 270,000	$ -
0305192N	INDOPACOM Capabilities	$ -	$ 37,688	$ -
0305282M	Low-Cost Weapons	$ -	$ 35,901	$ -
0601153N	Shipbuilding	$ -	$ 8,000	$ -
0602782N	Shipbuilding	$ -	$ 80,000	$ -
0603123N	Low-Cost Weapons	$ -	$ 21,800	$ -
0603178N	Shipbuilding	$ -	$ 57,860	$ -
0603382N	Munitions and Supply Chain	$ -	$ 39,000	$ -
0603563N	Low-Cost Weapons	$ -	$ 3,000	$ -

Table 2: Detailed Mandatory Breakout (Cont)				
BLI	Reconciliation Bin Title	FY 2025 ($K)	FY 2026 ($K)	FY 2027 ($K)
0603563N	Munitions and Supply Chain	$ -	$ 120,000	$ -
0603563N	Shipbuilding	$ -	$ 39,200	$ -
0603564N	Low-Cost Weapons	$ -	$ 29,200	$ -
0603576N	Air Superiority	$ -	$ 25,000	$ -
0603635M	Low-Cost Weapons	$ -	$ 4,750	$ -
0603640M	Low-Cost Weapons	$ -	$ 26,000	$ -
0603640M	Munitions and Supply Chain	$ -	$ 37,413	$ -
0603724N	Low-Cost Weapons	$ -	$ 98,372	$ -
0603734N	Air Superiority	$ -	$ 500,000	$ -
0603748N	INDOPACOM Capabilities	$ -	$ 90,000	$ -
0604028N	Shipbuilding	$ -	$ 180,252	$ -
0604029N	Low-Cost Weapons	$ -	$ 30,000	$ -
0604029N	Shipbuilding	$ -	$ 94,180	$ -
0604031N	Shipbuilding	$ -	$ 360,000	$ -
0604230N	INDOPACOM Capabilities	$ -	$ 2,000	$ -
0604230N	Low-Cost Weapons	$ -	$ 37,300	$ -
0604286N	Munitions and Supply Chain	$ -	$ 186,000	$ -
0604307N	Munitions and Supply Chain	$ -	$ 65,000	$ -
0604320M	Readiness	$ -	$ 18,500	$ -
0604536N	Shipbuilding	$ -	$ 389,408	$ -
0604601N	Munitions and Supply Chain	$ -	$ 178,326	$ -
0604610N	Munitions and Supply Chain	$ -	$ 88,179	$ -
0604659N	Munitions and Supply Chain	$ -	$ 89,333	$ -
0604756N	Munitions and Supply Chain	$ -	$ 200,000	$ -
0604786N	Munitions and Supply Chain	$ -	$ 118,000	$ -
0605220N	Shipbuilding	$ -	$ 1,688	$ -
0605285N	Air Superiority	$ -	$ 750,000	$ -
0605512N	Shipbuilding	$ -	$ 39,426	$ -
0605513N	Low-Cost Weapons	$ -	$ 52,000	$ -
0605513N	Shipbuilding	$ -	$ 263,330	$ -
0605853N	INDOPACOM Capabilities	$ -	$ 29,150	$ -
0605853N	Low-Cost Weapons	$ -	$ 39,142	$ -
Mandatory Total		**$ 7,030**	**$ 6,747,792**	**$ 3,849,854**

MANDATORY FUNDING JUSTIFICATION:

The FY 2027 request for Research, Development, Test and Evaluation, Navy includes $32,386,619 thousand of discretionary and $3,849,854 thousand of mandatory for a total of $36,236,473 thousand.

The mandatory funds support:

Advanced Shipbuilding Industrial Base and Future Ship Experimental: The $1,850 million in Navy RDT&E will be used to investigate a full spectrum of procurement options to attract more shipbuilding capacity into domestic shipyards and bring additional ships into the fleet – including studies of the ability of allied shipbuilding companies to build ships or components. This funding will be split into two separate study and procurement efforts targeting the fleet's future CruDes and Frigate inventories, respectively.

C2D2 F-35C: The FY 2027 request for C2D2 F-35C includes $689 million supporting Block 4 capability development and acceleration of Engine & Power Thermal Management delivery timelines.

C2D2 F-35B: The DON's FY 2027 request for C2D2 F-35B includes $788 million supporting Block 4 capability development and acceleration of Engine & Power Thermal Management delivery timelines.

FA-XX: The Navy's FY 2027 request for FA-XX includes $72 million with details held at a higher classification level.

Conventional Prompt Strike (CPS): The Navy's FY 2027 budget request includes $451 million mandatory request for the marinization of the Box Erector Launcher System (BELS) and acceleration of TI-development.

The FY 2026 spend plan for Research, Development, Test and Evaluation, Navy includes $27,942,776 thousand of discretionary and $6,747,792 thousand of mandatory for a total of $34,690,568 thousand.

The FY 2025 spend plan for Research, Development, Test and Evaluation, Navy includes $26,098,258 thousand of discretionary and $7,030 thousand of mandatory for a total of $26,105,288 thousand.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy												Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601103N *I University Research Initiatives*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	113.248	68.947	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	182.195
1100: *Defense University Research Instrumentation Prgm*	0.000	14.140	16.189	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.329
1101: *Multidisciplinary University Research Initiative*	0.000	67.676	51.117	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	118.793
1102: *Presidential Early Career Awards*	0.000	1.925	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.925
1103: *Future R&D Workforce Development*	0.000	7.690	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.690
9999: *Congressional Adds*	0.000	21.817	1.641	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.458

A. Mission Description and Budget Item Justification

The Office of Naval Research's (ONR) mission is to ensure the technological advantage of U.S. Naval forces. ONR fosters scientific research necessary for the discovery, development and delivery of new technologies. Often this research is done in partnership with academia. This program includes support for multidisciplinary basic research in a wide range of naval relevant scientific and engineering disciplines that enables the U.S. Navy to maintain technological superiority, for the university research infrastructure to acquire the research instrumentation needed to maintain and improve the quality of university research important to the Navy, and for the graduate students and postdoctoral fellows who will lead DON S&T efforts in the future. Multidisciplinary University Research Initiative (MURI) efforts involve teams of researchers investigating high priority topics and opportunities that intersect more than one traditional technical discipline. For many military problems, this multidisciplinary approach serves to stimulate innovation, accelerate research progress and lay the foundations for transition of results into Naval applications. The Defense University Research Instrumentation Program (DURIP) supports university research infrastructure essential to high quality, Navy-relevant research. The instrumentation program complements other Navy research programs by supporting the purchase of high-cost research instrumentation that is necessary to carry out cutting-edge research. This program has historically supported Presidential Early Career Awards for Scientists and Engineers (PECASE) which are single investigator research efforts performed by outstanding academic scientists and engineers early in their research careers. This program provides the knowledge base, scientific concepts, and technological advances for the maintenance of Naval power and national security. The ONR Graduate Student and Postdoctoral Fellow Support project previously supported the participation of graduate students and postdoctoral fellows in DON-related research. These graduate students and postdoctoral fellows will be the future leaders in areas of science, technology, engineering and mathematics (STEM) critical to DON, DOW and national security.

The missions of today's Sailors and Marines are enabled by the results of Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure Naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to Commanders today, and options for the future. The Naval S&T budget

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103N *I University Research Initiatives*

supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research as outlined in the Naval R&D Framework.

This Program Element (PE) funds Basic Research, typically defined as systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. The work in this PE can be classified between Technology Readiness Level (TRL) 1 (basic principles observed and reported) and TRL 2 (technology concept and/or application formulation).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	116.859	67.306	105.280	-	105.280
Current President's Budget	113.248	68.947	0.000	-	0.000
Total Adjustments	-3.611	1.641	-105.280	-	-105.280
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.059			
• Congressional Rescissions	-	-			
• Congressional Adds	-	1.700			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.611	0.000			
• Program Adjustments	0.000	0.000	-105.280	-	-105.280
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Multibeam Solar System*	0.000	1.641
Congressional Add: *Next Generation Real-Time Digital RADAR system dev*	12.163	0.000
Congressional Add: *Highly digital airborne RADAR*	4.827	0.000
Congressional Add: *Processing & network of distributed digital radar*	4.827	0.000
Congressional Add Subtotals for Project: 9999	21.817	1.641
Congressional Add Totals for all Projects	21.817	1.641

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601103N *I University Research Initiatives*

Change Summary Explanation

Funding: The FY 2027 budget request was decreased reducing Defense University Research Instrumentation Program (DURIP) and Multidisciplinary University Research Initiatives (MURI) awards and eliminating Presidential Early Career Awards (PECASE) and Future R&D Workforce Development efforts for higher departmental priorities.

Technical: ONR will not solicit proposals for new PECASE awards and will end funding to directly support the graduate students and post-doctoral students. MURI awards with funding tails will need to be reprioritized within focus area roadmaps within PE 0601153N as well as any new research initiatives.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / *University Research Initiatives*	Project (Number/Name) 1100 / *Defense University Research Instrumentation Prgm*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1100: *Defense University Research Instrumentation Prgm*	0.000	14.140	16.189	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.329

A. Mission Description and Budget Item Justification

Defense University Research Instrumentation Program (DURIP) funds are awarded to universities to purchase high- cost research instrumentation that is normally not provided for in single-investigator research grants. Individual grants may range from $50K to $3.0M. Proposals for DURIP awards are submitted to the Services (Army, Navy, Air Force, Space Force) in response to a public Funding Opportunity Announcement (FOA). Proposals received by the Office of Naval Research (ONR) are reviewed and all valid proposals received are prioritized. The Office of the Secretary of War (OSW) reviews, selects and announces all Department of War (DoW) awardees. Universities awarded grants are required to purchase the instrumentation and take delivery before any billing occurs. DURIP awards provide one-year funding. The DURIP proposal and award cycle is required to be completed within one fiscal year.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Defense University Research Instrumentation Program (DURIP)	14.140	16.189	0.000	0.000	0.000
Description: Defense University Research Instrumentation Program (DURIP) funds are awarded to universities and research institutions to purchase relatively high cost research instrumentation that is normally not included in single-investigator research grants. Individual grants range from $50K to $3.0M. Proposals for DURIP awards are submitted in response to a funding opportunity announcement (FOA) and a review of all valid proposals submissions received via grants.gov portal. The Office of the Secretary of War (OSW) selects and announces the awardees, which typically takes place towards the second half of the fiscal year. Universities are required to purchase the instrumentation and take delivery before any billing occurs. It frequently takes several months for delivery and billing to be completed. DURIP is a one-year program, so awards are notionally initiated and completed within the same fiscal year.					
FY 2026 Plans: - Completed funding awards to support purchase or development of instrumentation to enhance ONR basic research efforts across the S&T spectrum, to include workforce development of students and postdoctoral fellows.					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601103N / *University Research Initiatives*	**Project (Number/Name)** 1100 / *Defense University Research Instrumentation Prgm*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** FY27 decrease of $16.189M due to reductions in DURIP investments for alignment to Navy strategic goals within the S&T portfolio for Naval prioritization of Future Naval Capabilities and Technology Candidates.					
Accomplishments/Planned Programs Subtotals	14.140	16.189	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

not required

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / *University Research Initiatives*	Project (Number/Name) 1101 / *Multidisciplinary University Research Initiative*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1101: *Multidisciplinary University Research Initiative*	0.000	67.676	51.117	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	118.793

A. Mission Description and Budget Item Justification

The Multidisciplinary University Research Initiative (MURI) project is a Department of War (DoW) coordinated effort that supports high priority pure research topics. Each MURI topic is a five-year research grant addressing a challenging multidisciplinary scientific problem. MURI topics require collaboration among academic experts across disciplines from two or more universities to explore solutions to these cross-Service research challenges.

The Office of the Undersecretary of War (OUSW) calls for new research topics annually, provides topic guidance, and approves new topics from each of the DoW Services. Office of Naval Research (ONR) MURI topics are selected based on Naval Science and Technology (S&T) priorities. Proposals for MURI research topics are submitted in response to a public Funding Opportunity Announcement (FOA) and all valid research proposals are evaluated by teams of technical experts. The Office of the Secretary of War (OSW) reviews all award nominations and announces selected awardees. Only US Universities and Research Institutions are eligible performers and the funding is provided through research grants.

MURI projects make significant contributions to Navy and Department of War (DOw) objectives by accelerating research results through multi-university collaboration, a cross-fertilization of ideas, concepts and research approaches pursued. This collaborative research environment nurtured hastens the maturation of basic research concepts to applied applications and through the training of students in cross-disciplinary approaches to science and engineering research topics of priority interest to DoW.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Multidisciplinary University Research Initiative (MURI)	67.676	51.117	0.000	0.000	0.000
Description: The Multidisciplinary University Research Initiative (MURI) project is a Department of War (DoW) coordinated effort that supports high priority pure research topics. Each MURI topic is a five-year research grant addressing a challenging multidisciplinary scientific problem. MURI topics require collaboration among academic experts across disciplines from two or more universities to explore solutions to these cross-Service research challenges. The Office of the Undersecretary of War (OUSW) calls for new research topics annually, provides topic guidance, and approves new topics from each of the DoW Services. Office of Naval Research (ONR) MURI topics are selected based on Naval Science and Technology (S&T) priorities. Proposals for MURI research topics are submitted in response to a public Funding Opportunity Announcement (FOA) and all valid research proposals are evaluated by teams of technical experts. The Office of the Secretary of War (OSW) reviews all					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601103N / *University Research Initiatives*	**Project (Number/Name)** 1101 / *Multidisciplinary University Research Initiative*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
award nominations and announces selected awardees. Only U.S. Universities and Research Institutions are eligible performers and the funding is provided through research grants. MURI projects make significant contributions to Navy and Department of War (DOW) objectives by accelerating research results through multi-university collaboration, a cross-fertilization of ideas, concepts and research approaches pursued. This collaborative research environment nurtured hastens the maturation of basic research concepts to applied applications and through the training of students in cross-disciplinary approaches to science and engineering research topics of priority interest to DoW. ***FY 2026 Plans:*** Completed support for multidisciplinary research in all ongoing research topic areas. Update the Notice of Funding Opportunity (NOFO) to publish new research topic areas of priority interest to the Navy. Complete planned research efforts in multidisciplinary topics. Initiate up to ten new multidisciplinary research efforts. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** FY27 decrease of $51.117 due to reductions in MURI investments for alignment to Navy strategic goals within the S&T portfolio for Department prioritization of Future Naval Capabilities and Technology Candidates.					
Accomplishments/Planned Programs Subtotals	67.676	51.117	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / *University Research Initiatives*	Project (Number/Name) 1102 / *Presidential Early Career Awards*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1102: *Presidential Early Career Awards*	0.000	1.925	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.925

A. Mission Description and Budget Item Justification

Presidential Early Career Awards (PECASE) awards are highly competitive research awards made to academic scientists early in their research careers. PECASE awards are extremely prestigious, single-investigator research awards in areas of vital importance to the Department of the Navy. These research awards, made to the very best early career scientists and engineers, provide award recipients national recognition and research grants of up to $200K per year for five years. The Office of the Secretary of War (OSW) has policy and oversight responsibility for the PECASE program. ONR award nominations are reviewed by ONR, the Office of the Undersecretary of War (OUSW), and the White House Office of Science and Technology Policy (OSTP) prior to approval and announcement.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Presidential Early Career Awards (PECASE)	1.925	0.000	0.000	0.000	0.000
Description: Presidential Early Career Awards (PECASE) awards are highly competitive research awards made to academic scientists early in their research careers. PECASE awards are extremely prestigious, single-investigator research awards in areas of vital importance to the Department of the Navy. These research awards, made to the very best early career scientists and engineers, provide award recipients national recognition and research grants of up to $200K per year for five years. The Office of the Secretary of War (OSW) has policy and oversight responsibility for the PECASE program. ONR award nominations are reviewed by ONR, the Office of the Undersecretary of War (OUSW), and the White House Office of Science and Technology Policy (OSTP) prior to approval and announcement. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.925	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601103N / *University Research Initiatives*	**Project (Number/Name)** 1102 / *Presidential Early Career Awards*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

not required

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / *University Research Initiatives*	Project (Number/Name) 1103 / *Future R&D Workforce Development*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1103: *Future R&D Workforce Development*	0.000	7.690	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.690

A. Mission Description and Budget Item Justification

The Graduate Student and Postdoctoral Researcher (GSPR) Support Program helps to ensure the quality and vitality of the future DoN scientific and engineering workforce. The program supports graduate students and postdoctoral fellows engaged in research activities of interest to the Department of the Navy (DoN). Research activities supported in high priority Naval science, technology, engineering and mathematics (STEM) disciplines at U.S. institutions, its territories, or possessions, or the Commonwealth of Puerto Rico will provide graduate students and postdoctoral fellows with invaluable experience conducting basic research in areas of priority Naval interest, responsibility and exposure to unique Naval environmental factors of critical importance.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Graduate Student & Postdoctoral Researcher (GSPR) Support	7.690	0.000	0.000	0.000	0.000
Description: The Graduate Student and Postdoctoral Researcher (GSPR) Support Program helps to ensure the quality and vitality of the future Department of the Navy (DoN) scientific and engineering workforce. The program supports graduate students and postdoctoral fellows engaged in research activities of interest to the Navy. The GSPR supports basic research activities in naval science, technology, engineering and mathematics (STEM) disciplines. Graduate students and postdoctoral fellow GSPR participants will gain invaluable experience conducting basic research in challenging areas of priority Naval interest, responsibility and exposure to unique naval environmental factors of critical importance. Students and postdoctoral fellows at U.S. institutions, its territories, or possessions, or the Commonwealth of Puerto Rico are eligible. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	7.690	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601103N / *University Research Initiatives*	**Project (Number/Name)** 1103 / *Future R&D Workforce Development*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

not required

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601103N / *University Research Initiatives*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	21.817	1.641	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	23.458

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Multibeam Solar System ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research into Multibeam Solar System	0.000	1.641
Congressional Add: Next Generation Real-Time Digital RADAR system dev ***FY 2025 Accomplishments:*** Conduct Next Generation Real-Time Digital RADAR system development ***FY 2026 Plans:*** N/A	12.163	0.000
Congressional Add: Highly digital airborne RADAR ***FY 2025 Accomplishments:*** Develop Highly digital airborne RADAR. ***FY 2026 Plans:*** N/A	4.827	0.000
Congressional Add: Processing & network of distributed digital radar ***FY 2025 Accomplishments:*** Conduct research into Processing & network of distributed digital radar. ***FY 2026 Plans:*** N/A	4.827	0.000
Congressional Adds Subtotals	21.817	1.641

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601153N *I Defense Research Sciences*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	487.237	527.574	525.399	-	525.399	544.287	575.770	569.546	559.163	Continuing	Continuing
1099: *Experimentation and Analysis*	0.000	7.670	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.670
1385: *Aerospace Sciences*	0.000	25.577	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	25.577
1386: *Biomedical*	0.000	5.794	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.794
1387: *Biotechnology*	0.000	22.690	0.000	9.627	-	9.627	10.129	10.641	11.783	11.449	Continuing	Continuing
1388: *Directed Energy*	0.000	7.332	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.332
1389: *Electromagnetic Spectrum*	0.000	10.717	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.717
1390: *Electronics*	0.000	46.977	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	46.977
1391: *Full Spectrum Cyber*	0.000	12.828	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.828
1392: *Human Systems*	0.000	34.061	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	34.061
1393: *Kinetic Weapons*	0.000	6.729	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.729
1394: *Manufacturing*	0.000	0.255	2.361	2.250	-	2.250	2.155	2.581	2.605	2.650	Continuing	Continuing
1395: *Materials*	0.000	56.582	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	56.582
1396: *Naval Engineering*	0.000	20.758	15.642	20.194	-	20.194	21.367	23.580	22.973	22.418	Continuing	Continuing
1398: *Ocean Atmosphere and Space Sciences*	0.000	117.746	127.483	114.939	-	114.939	122.169	128.743	119.449	116.329	Continuing	Continuing
1400: *Power and Energy*	0.000	26.098	19.903	18.833	-	18.833	18.674	19.682	20.006	20.011	Continuing	Continuing
1401: *Undersea Systems Payloads and Weapons*	0.000	6.540	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.540
1402: *Naval STEM, Outreach, & Partnerships*	0.000	16.958	56.780	62.423	-	62.423	63.291	66.276	65.738	66.925	Continuing	Continuing
1501: *Autonomy/AI*	0.000	0.000	2.940	27.696	-	27.696	24.309	26.371	25.894	25.536	Continuing	Continuing
1502: *C5ISR/Naval Space*	0.000	0.000	57.921	47.576	-	47.576	53.096	56.236	54.714	53.032	Continuing	Continuing
1503: *Directed Energy & Kinetic Systems*	0.000	0.000	16.870	17.208	-	17.208	18.091	19.771	19.582	19.917	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 1: *Basic Research*					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*							
1505: *Human & Biological Systems*	0.000	0.000	45.510	30.847	-	30.847	30.341	31.982	33.256	32.266	Continuing	Continuing
1506: *Materials/Electronics*	0.000	0.000	114.753	109.579	-	109.579	112.643	117.389	123.193	119.362	Continuing	Continuing
1507: *Naval Aerospace*	0.000	0.000	25.535	18.177	-	18.177	18.666	20.071	19.369	18.775	Continuing	Continuing
1508: *Undersea Systems*	0.000	0.000	6.916	4.265	-	4.265	4.242	4.467	4.487	4.564	Continuing	Continuing
1510: *Expeditionary Campaign*	0.000	0.000	0.000	20.754	-	20.754	23.637	25.968	24.413	23.466	Continuing	Continuing
3465: *In-House Lab Independent Res*	0.000	17.401	18.549	21.031	-	21.031	21.477	22.012	22.084	22.463	Continuing	Continuing
5893: *Decision Superiority*	0.000	32.458	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.458
9999: *Congressional Adds*	0.000	12.066	16.411	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.477

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) was established by Congress in 1946 to plan, foster and encourage scientific research in recognition of its paramount importance to the maintenance of American naval power and national security. ONR manages the Department of the Navy's (DON) portfolio of Basic Research (BA1), Applied Research (BA2) and Advanced Technology Development (BA3) investments to ensure naval forces can effectively deter conflict, but when called upon, are equipped and prepared to fight, win and return home safely. This Defense Research Sciences (DRS) Program Element (PE) supports the Basic Research (BA1) portion of the Department of the Navy (DON) science and technology (S&T) portfolio, laying the foundation for new innovative technologies and future capabilities for naval warfighters. Basic research conducted within this PE include theoretical and experimental investigations directed toward increasing our knowledge and understanding of the physical, chemical, engineering, environmental and life sciences. The preponderance of research conducted within this PE is performed by academia and government labs, both of which play significant roles in developing the S&T workforce of tomorrow in addition to delivery new knowledge and scientific discoveries.

This PE supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy (SECNAV) through research priorities set by the Chief of Naval Research (CNR). Research activities support long-term investments as outlined in an S&T Strategic Plan. The basic research conducted within this PE supports areas of traditional, unique and emerging naval need to help ensure naval operational readiness and unsurpassed warfighting capabilities in the maritime domain.

Basic research conducted within this Defense Research Sciences (DRS) PE has been organized around the following research areas of priority naval interest:

- Information, Cyber and Spectrum Superiority
- Ocean Battlespace Sensing
- Mission capable, Persistent & Survivable Naval Platforms
- Warfighter Performance
- Naval Air Warfare and Weapons

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601153N *I Defense Research Sciences*

- Naval Research Laboratory - Base
- ONR Global
- In-House Laboratory Independent Research

Research advancements and fundamental science breakthroughs within these research areas of naval priority interest establish a foundation that provides an opportunity to mature concepts through continued exploration and more narrowly focused applied research applications. The thoughtful, systematic study of fundamental phenomena towards more naval specific environments, applications and warfighting solutions is critical to long-term naval operational and security needs.

The basic research conducted within this PE is expected to be at Technology Readiness Level (TRL) 1 (basic principles observed and reported) up to TRL 2 (technology concept and/or application formulation). DRS basic research (BA1) results provide the foundation for later applied research (BA2) and advanced technology development (BA3) solution options for the Navy and Marine Corps.

DRS research advancements and technology development accomplishments influence candidate solutions to the Navy and Marine Corps technical and operational challenges experienced by acquisition Programs of Record (PoR) via the Future Naval Capabilities (FNCs) portfolio. DRS research advancements are also fundamentally relevant to more general, fundamental naval warfighting concepts and approaches by opening up new potential warfighting capability options via the Innovative Naval Prototypes (INPs) portfolio.

Due to the number of efforts in this PE, the projects described herein are representative of research conducted within this PE.

The FY 2026 spend plan amount for Research, Development, Test and Evaluation, Navy includes $527,574 thousand of discretionary and $8,000 thousand of mandatory (reconciliation) for a total of $535,574.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	496.414	511.163	535.312	-	535.312
Current President's Budget	487.237	527.574	525.399	-	525.399
Total Adjustments	-9.177	16.411	-9.913	-	-9.913
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.589			
• Congressional Rescissions	-	-			
• Congressional Adds	-	17.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.981	0.000			
• SBIR/STTR Transfer	-6.196	0.000			
• Program Adjustments	0.000	0.000	-9.913	-	-9.913
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 1: *Basic Research*	**R-1 Program Element (Number/Name)** PE 0601153N *I Defense Research Sciences*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *High Temperature Semiconductor Focal-Plane Electro*	0.000	4.827
Congressional Add: *Carbon Nanotube Technology*	0.000	5.792
Congressional Add: *Remote Sensing to Monitor Arctic Sea Ice*	0.000	5.792
Congressional Add: *Hypersonic workforce development*	3.861	0.000
Congressional Add: *Materials and structures in extreme environments*	5.792	0.000
Congressional Add: *Shaping metallic surfaces for thermal system management*	2.413	0.000
Congressional Add Subtotals for Project: 9999	12.066	16.411
Congressional Add Totals for all Projects	12.066	16.411

Change Summary Explanation

Funding: Decrease due to a reduction in contract services and reprioritization of S&T resources.

Technical: PU 1510: Expeditionary Campaign- was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. This is not a new start. Investments were previously funded in this same PE under Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics, and 1507 Naval Aerospace.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1099 / *Experimentation and Analysis*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1099: *Experimentation and Analysis*	0.000	7.670	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.670

Note

FY 2026 realign efforts under the same program element from Project Unit (PU) 1099 to 11 PUs as follows: 1394, 1396, 1398, 1400, 1501, 1502, 1503, 1505, 1506, 1507, and 1508.

A. Mission Description and Budget Item Justification

Office of Naval Research Global (ONR Global) supports the basic research portion of the Department of the Navy (DON) science and technology (S&T) portfolio, by exploring science and technology research activities being conducted by scientists and universities outside of the United States. These basic research concepts have gone forward to become the foundation for new innovative technologies and future capabilities for naval warfighters. ONR Global's mission is to obtain, coordinate, and make available world-wide scientific information, to provide Global Technology Awareness; serve as an avenue for experimentation and analysis in support of transitioning basic research; provide rapid-prototyping solutions to problems submitted by Sailors and Marines world-wide; and to work closely with our unparalleled network of allies and partners to support the strategy of integrated deterrence across the globe.

This project unit supports higher guidance defined by the National Defense Strategy and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework. Research activities support long-term investments as outlined in an S&T Strategic Plan. The basic research conducted within this project activity supports areas of traditional, unique and emerging naval need to help ensure naval operational readiness and unsurpassed warfighting capabilities in the maritime domain.

The basic research conducted within this project unit is expected to be at Technology Readiness Level (TRL) 1 (basic principles observed and reported) up to TRL 2 (technology concept and/or application formulation). DRS basic research (BA1) results provide the foundation for later applied research (BA2) and advanced technology development (BA3) solution options for the Navy and Marine Corps.

ONR Global S&T research follows the trend of other DRS activities by advancing aspects of applied research and technology development that are developed into solutions for Navy and Marine Corps technical challenges via the Future Naval Capabilities (FNCs) pipeline, and new capability options for the future via the Innovative Naval Prototypes (INPs) portfolio. Just as today's Sailors and Marines are enabled by past naval S&T investments, current investments hedge against uncertainty, providing the scientific basis for near-term solutions to commanders today and options for an unknown future.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Global Technology Awareness	7.670	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1099 / *Experimentation and Analysis*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: Realign efforts under the same program element from Project Unit (PU) 1099 to 11 PUs as follows: 1394, 1396, 1398, 1400, 1501, 1502, 1503, 1505, 1506, 1507, and 1508. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	7.670	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not required

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1385 / *Aerospace Sciences*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1385: *Aerospace Sciences*	0.000	25.577	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	25.577

Note

Investments in Project 1385 Aerospace Sciences are now funded in this same PE 0601153N under Project 1507 Naval Aerospace.

A. Mission Description and Budget Item Justification

The Aerospace Sciences activity develops technologies for the science and engineering of flight from the land and sea surfaces to the edge of the atmosphere, and as applicable to the utilization of flight for aircraft, missiles, rockets, munitions, and unmanned systems (UxS) employed by the Navy and Marine Corps forces operating from naval platforms or land locations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Aerodynamics ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.608	0.000	0.000	0.000	0.000
Title: Flight Dynamics & Controls ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.814	0.000	0.000	0.000	0.000
Title: Aerospace Structures and Materials ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***	3.596	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1385 / *Aerospace Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Title: Science of Autonomy ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	8.362	0.000	0.000	0.000	0.000
Title: STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.084	0.000	0.000	0.000	0.000
Title: Expeditionary Aerospace Sciences ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.113	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	25.577	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1385 / *Aerospace Sciences*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1386 / *Biomedical*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1386: *Biomedical*	0.000	5.794	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.794

Note

Investments in Project 1386 Biomedical are now funded in this same PE 0601153N under Project 1505 Human and Biological Systems and Project 1402 Naval STEM, Outreach, and Partnerships.

A. Mission Description and Budget Item Justification

The health and performance of Sailors and Marines is a top priority. Research in the biomedical sciences allow us to discover and leverage breakthroughs that will improve Naval warfighter performance so they can fight, win and come home safe. Conducting research to gain a better understanding of the biomedical challenges of warfighters in their operating environments will ensure optimal performance, prevent injury, and equip the DON to provide the best care for its warfighters.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Biomedical ***Description:*** Addresses the fundamental basic research and phenomenological studies into the science of health, survivability, and recovery of naval expeditionary forces operating in austere, distributed, and isolated maritime environments and to enable fundamentally new biomedical applications in the future operating environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.378	0.000	0.000	0.000	0.000
Title: Naval Force Health Protection and Human Performance ***Description:*** The Naval Force Health Protection and Human Performance planned program investigates research that will enhance the health, survivability, and recovery of Sailors and Marines operating in austere, distributed, and isolated maritime environments. The objectives are to enable naval forces to bring their biomedical capacity forward, create it on-demand, support prolonged field care, enable casualty evacuation, and provide en route care. This activity also addresses unique naval medical challenges associated with hypothermal and hyperbaric exposure.	3.849	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1386 / *Biomedical*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The research areas described in this planned program were previously represented under the Medical and Biological Sciences planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Naval Force Health Protection, Physiological Monitoring and Modeling, Stress Response, and Undersea Medicine. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: NREIP/SEAP ***Description:*** This program supports both the Naval Research Enterprise Intern Program (NREIP) for college students and the Science and Engineering Apprenticeship Program (SEAP) for high school students to encourage participants to pursue science and engineering careers. The objective is to further education via mentoring by laboratory personnel and their participation in research, and to make them aware of Department of the Navy (DON) research and technology efforts. This program serves as a recruitment tool for employment within the DON. Participating students at 45 DON laboratories will spend eight to ten weeks during the summer conducting research. The research described in this planned program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	0.926	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1386 / *Biomedical*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Title: Young Investigator Program ***Description:*** The Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are early in their careers and show exceptional promise for performing creative research. The objectives of this program are to attract outstanding faculty members of U.S. Institutions of Higher Education to the Department of the Navy's Science and Technology research program, to support their research, and to encourage their teaching and research careers. This program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.641	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	5.794	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1387 / *Biotechnology*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1387: *Biotechnology*	0.000	22.690	0.000	9.627	-	9.627	10.129	10.641	11.783	11.449	Continuing	Continuing

Note

Majority of investments in Project 1387 Biotechnology are now funded in this same PE 0601153N under Project 1505 Human and Biological Systems and Project 1402 Naval STEM, Outreach, and Partnerships.

A. Mission Description and Budget Item Justification

Shortages of domestically sourced raw materials and power and energy challenges demand alternative approaches to protect military capabilities from scarcity vulnerabilities. These biology-based solutions introduce new opportunities to reduce logistics and resource risk and improve technology-enabled military capabilities. The objective of this research area is to identify and use nature's biological principles in materials, biomechanics, bioenergy, bioelectronics, propulsion, and control to solve critical naval challenges. The resultant technologies provide solutions that are superior to those based on physical sciences and materials engineering approaches.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Bio-Inspired Systems and Soft Robotics	2.260	0.000	0.000	0.000	0.000
Description: The Bio-Inspired Systems and Soft Robotics planned program investigates research that will expand the operational envelope of Navy underwater and amphibious vehicles and enable enhanced underwater manipulation. The research investments in this program extract principles of sensorimotor control, biomechanics and fluid dynamics of underwater propulsion and control in aquatic and amphibious animals that underlie the agility, stealth, efficiency and sensory adaptations of these animals. The research efforts described in this planned program were previously represented under the Medical and Biological Sciences planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Bioinspired Autonomous Systems and Soft Robotics. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Biosciences, Bioengineering, and Synthetic Biology for Future Naval Applications	4.642	0.000	9.627	0.000	9.627

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1387 / *Biotechnology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The aim of the Biosciences, Bioengineering, and Synthetic Biology for Future Naval Applications planned program is to discover and develop biological/biologically-inspired and bioengineered solutions to expand current Warfighter capabilities in the domains of materials, manufacturing, energy, electronics, sensors and devices. The research efforts described in this planned program were previously represented under the Medical and Biological Sciences planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Bioengineering and Life Sciences, Naval Biosciences, and Synthetic Biology for Naval Applications ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Initiate an effort to understand the points of interface that often limit biotechnology and bioinspired processes. This work will also focus on developing new mechanisms for interfacing and identifying methods to exploit the interactions between biological and other components. - Initiate the utilization of biological processes for the synthesis of materials through biomanufacturing. This work seeks to support biologically-based solutions to fill capability gaps in military supply chains, solve logistics challenges, and provide materials with novel properties by investigating both whole cell and cell-free synthesis strategies. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase between FY2026 and FY2027 is due to increase of efforts being funded in biomanufacturing science and biology, materials, and warfighter interfaces. This is not a new start.					
Title: Historically Black Colleges and Universities / Minority Institutions (HBCU/MI)	6.377	0.000	0.000	0.000	0.000
Description: The Department of the Navy's (DON) Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) program oversees the Navy's efforts to engage and support research in our nation's HBCU/MIs and is responsible for developing and managing efforts that strengthen and support the capabilities of HBCU/MIs to participate in basic, applied, and advanced development research programs within the Naval					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1387 / *Biotechnology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Research Enterprise. This program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Naval Research Enterprise Intern Program (NREIP)/Science and Engineering Apprenticeship Program (SEAP) ***Description:*** This program supports both the Naval Research Enterprise Intern Program (NREIP) for college students and the Science and Engineering Apprenticeship Program (SEAP) for high school students to encourage participants to pursue science and engineering careers. The objective is to further education via mentoring by laboratory personnel and their participation in research, and to make them aware of Department of the Navy (DON) research and technology efforts. This program serves as a recruitment tool for employment within the DON. Participating students at 45 DON laboratories will spend eight to ten weeks during the summer conducting research. The research described in this planned program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.639	0.000	0.000	0.000	0.000
Title: Young Investigator Program (YIP)	0.441	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1387 / *Biotechnology*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are early in their careers and show exceptional promise for performing creative research. The objectives of this program are to attract outstanding faculty members of U.S. Institutions of Higher Education to the Department of the Navy's Science and Technology research program, to support their research, and to encourage their teaching and research careers. This program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Physiological Monitoring and Modeling ***Description:*** The Physiological Monitoring and Modeling activity explores the Biomanufacturing Sciences and Biology, Materials and Warfighter Interfaces. Biomanufacturing research activities addresses biological processes required for the synthesis of materials, including harnessing existing cellular production, isolation and utilization of cellular components or pathways, and modification of cellular systems to develop and optimize novel pathways or products. Biotechnology and bioinspired process research explores the potential of components, biological and otherwise, to activate processes for on-demand control, delivery of a product or package, interrogation of a response, stimulation of a behavior change, and similar actions that may require interfacing across a large range of scales (via organism, organ, cell, protein, etc.). ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	8.331	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	22.690	0.000	9.627	0.000	9.627

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1387 / *Biotechnology*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1388 / *Directed Energy*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1388: *Directed Energy*	0.000	7.332	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	7.332

Note

Investments in Project 1388 Directed Energy are now funded in this same PE 0601153N under Project 1503 Directed Energy & Kinetic Systems.

A. Mission Description and Budget Item Justification

The Directed Energy (DE) activity develops technologies that enable laser and high-power microwave (HPM) weapon systems, within Navy and Marine Corps size, weight, and power (SWAP) constraints, to strike enemy targets and to defend naval platforms and land bases from threats. Additionally, the DE activity develops technologies that enable defense against adversary DE systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Ultra Short Pulse Laser	2.714	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Title: High Power Microwaves	1.119	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Title: High Energy Laser & Counter Directed Energy Weapons	3.100	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1388 / *Directed Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Title: Expeditionary Directed Energy ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.399	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	7.332	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1389 / *Electromagnetic Spectrum*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1389: *Electromagnetic Spectrum*	0.000	10.717	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.717

Note

Investments in Project 1389 Electromagnetic Spectrum are now funded in this same PE 0601153N under Project 1502 C5ISR/Naval Space and Project 1506 Materials/ Electronics.

A. Mission Description and Budget Item Justification

The Electromagnetic Spectrum research area conducts fundamental research in areas that utilize the electromagnetic spectrum to deliver operational capability to the warfighter. This research area focuses on new concepts that increase knowledge and develops advanced capabilities regarding sensing, atmospheric considerations, networking, quantum phenomena, electromagnetic warfare, and the innovative use of the electromagnetic spectrum to provide a significant warfighting advantage. Research efforts include: Research Platforms, Networking Sensing, Quantum Measurement Architectural Devices, Expeditionary Electromagnetic Spectrum and Electromagnetic Warfare.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Research Platforms ***Description:*** The primary focus of the Research Platforms activity is to provide airborne research assets for collection of phenomenology data in real world environments in order to test new C5ISRT and Counter C5ISRT technologies and techniques. Data collection of this type is required to develop algorithms, train machine learning and test sensor capabilities to improve C5ISRT capabilities for Naval forces in complex electro-magnetic environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.194	0.000	0.000	0.000	0.000
Title: Networked Sensing ***Description:*** The primary focus of the Networked Sensing program is to conduct basic research in optical components and infrared technologies to enable significant leap-ahead capabilities for the survivability and lethality of Naval forces in complex environments.	0.922	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1389 / *Electromagnetic Spectrum*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Quantum Measurement Architectural Devices ***Description:*** The primary focus of the Quantum Measurement Architectural Devices activity is to conduct basic research in atomic, molecular and quantum systems to enable improved sensing and timekeeping capabilities for Naval forces in a contested environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.606	0.000	0.000	0.000	0.000
Title: Expeditionary Electromagnetic Spectrum ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.707	0.000	0.000	0.000	0.000
Title: Electromagnetic Warfare ***Description:*** The Electromagnetic Warfare (EmW) research area explores advanced concepts and knowledge required to develop new and advanced capabilities in electromagnetic warfare and its supporting technologies. Research activities will explore advances in radar systems, advanced signal processing, electronic warfare,	4.288	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1389 / *Electromagnetic Spectrum*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Electro Optic/Infrared (EO/IR) sensor technologies, decision making algorithms utilizing artificial intelligence (AI) concepts for signal processing and other emerging effectors across the entire electromagnetic spectrum (EmS). ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	10.717	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1390 / *Electronics*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1390: *Electronics*	0.000	46.977	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	46.977

Note

Investments in Project 1390 Electronics are now funded in this same PE 0601153N under Project 1506 Materials/Electronics.

A. Mission Description and Budget Item Justification

The Electronics research area conducts basic research focused on increasing knowledge, developing advanced components and materials for electronics, communication systems, sensing devices, etc., to ensure the Naval warfighter can counter current and future threats. The research activities will focus on the following areas:

- Nanoscale Computing Devices and Systems
- Electronics and Sensors Technology
- Expeditionary Electronics
- Electronic Materials and Processes

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Nanoscale Computing Devices and Systems ***Description:*** The Nanoscale Computing Devices and Systems activity invests in innovative research and breakthrough scientific discoveries that will inform the development of future technologies. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.004	0.000	0.000	0.000	0.000
Title: Electronics and Sensors Technology ***Description:*** This activity includes basic research efforts directed toward increasing knowledge, components and algorithmic advances for electronics and sensing ensuring the Navy can counter current and future threats. These efforts are applicable to electronics and sensing on individual Naval platforms, as well as efforts that aggregate capabilities in a Distributed Maritime Operation.	5.040	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1390 / *Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Research efforts include: sensing, diagnostics, and detectors; nanoelectronics; wide band gap power devices; real-time targeting; Electro-Optical/Infra-Red (EO/IR) electronics; EO/IR sensors for surface/aerospace surveillance; Radio Frequency (RF) sensors for surface/aerospace surveillance; and solid-state electronics. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Expeditionary Electronics ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.968	0.000	0.000	0.000	0.000
Title: Electronics Materials and Processes ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	35.965	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	46.977	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1390 / *Electronics*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1391 / *Full Spectrum Cyber*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1391: *Full Spectrum Cyber*	0.000	12.828	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.828

Note

Investments in Project 1391 Full Spectrum Cyber are now funded in this same PE 0601153N under Project 1502 C5ISR/Naval Space.

A. Mission Description and Budget Item Justification

The Full Spectrum Cyber research area addresses a number of research topics to include, but not limited to, advanced/emerging and theoretical implications of advanced networking architectures, neural networks, artificial intelligence (AI), machine learning (ML), secure software algorithms, autonomous operating agents/ systems, vulnerability analysis, use of intelligent agents, cryptographic computing, defenses against cyber-attacks, threat modeling, privacy-enhancing technologies, covert and encrypted communications, reconfigurable system design, quantum sensors, etc.

Basic research activities within this area include:
- Complex Software Systems and Cybersecurity
- Expeditionary Cyber
- Networks and Communications
- Science of Artificial Intelligence

B. Accomplishments/Planned Programs ($ in Millions)	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**
Title: Complex Software Systems and Cybersecurity	8.128	0.000	0.000	0.000	0.000
Description: This activity focuses on developing the fundamental principles and models for the design and construction of complex software and hardware systems that meet required assurances for security, safety, reliability and performance. It builds upon foundations of mathematical logic and computational complexity but takes into account the uncertainties and constraints of the Naval operational environment which is very different from commercial and home cyber environments. The overall goal is to measurably improve the ability of complex computing systems to meet the information-processing challenges of future naval systems. The Cyber Security sub-program investigates wide-ranging principles and techniques for continuously maintaining integrity, availability and confidentiality of information and information infrastructures, focusing on the software, the hardware and the network. The program heavily emphasizes automation and autonomy in the cyber environment, preferring the human-on-the-loop paradigm over the human-in-the-loop, whenever possible. The program seeks to establish an autonomic, secure and dependable informational infrastructure toward ensuring Navy's mission successes. The Complex Software sub-program: Investigates principles, algorithms and methods; explores software and hardware engineering proof-of-concept tools for achieving efficient, timely, robust and secure software executables; focuses on science for software construction, correctness and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1391 / *Full Spectrum Cyber*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
efficiency by revisiting software development and deployment methodology. Efficient, timely, robust and secure cyber systems are required for secure computing infrastructure toward ensuring Navy's mission successes. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Expeditionary Cyber ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.411	0.000	0.000	0.000	0.000
Title: Networks and Communications ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.818	0.000	0.000	0.000	0.000
Title: Science of Artificial Intelligence ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***	1.471	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1391 / *Full Spectrum Cyber*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	12.828	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1392 / *Human Systems*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1392: *Human Systems*	0.000	34.061	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	34.061

Note

Investments in Project 1392 Human Systems are now funded in this same PE 0601153N under Project 1505 Human and Biological Systems, 1402 Naval STEM, Outreach and Partnerships as well as 1501 Autonomy/AI.

A. Mission Description and Budget Item Justification

Humans are at the core of every current and foreseeable Naval mission, whether they are assessing, coordinating and communicating decisions and actions across and within command echelons, planning and directing missions, controlling, managing or supervising systems in support of a mission, or directly executing the mission. The ability to select, train, sustain, maintain, and improve innate human competencies extends the warfighter's ability to meet current and anticipated needs. Creating synergies between warfighters and their technologies positions naval forces to quickly pivot to meet and dominate future challenges.

The basic research in this project will lead to the development of future capabilities for maintaining, sustaining, and enhancing a warfighter's performance across a range of missions and operational environments throughout their career. The science and resulting technologies enable streamlined talent management, enhance cognitive and physical performance, and augment warfighter-machine teaming for greater operational effectiveness.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Human Systems	5.372	0.000	0.000	0.000	0.000
Description: Addresses the fundamental basic research to support new science advancements that enhance cognitive and physical performance, and augment warfighter-machine teaming for greater operational effectiveness in the future operating environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Human-Level Artificial Intelligence and Autonomy	7.885	0.000	0.000	0.000	0.000
Description: Mission sets and operational threats continue to evolve, and weapons platform technologies continue to advance. As a result, the manner in which warfighters will be employed must adapt in new and to-					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
be-determined ways, making continued human systems science and technology efforts crucial to maintaining a decisive advantage of our warfighters over those of our adversaries. The Human-Level Artificial Intelligence and Autonomy planned program will help us gain a deeper understanding of how Warfighters sense, process, and use information to make decisions, and on providing the understanding needed for future technologies that can leverage cognition to enable humans to make better decisions. The research areas described in this planned program were previously represented under the Human Systems planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Command Decision Making, Cognitive Science for Human-Machine Teaming, Computational Neuroscience, and Human Interaction with Autonomous Systems. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: NREIP/SEAP ***Description:*** This program supports both the Naval Research Enterprise Intern Program (NREIP) for college students and the Science and Engineering Apprenticeship Program (SEAP) for high school students to encourage participants to pursue science and engineering careers. The objective is to further education via mentoring by laboratory personnel and their participation in research, and to make them aware of Department of the Navy (DON) research and technology efforts. This program serves as a recruitment tool for employment within the DON. Participating students at 45 DON laboratories will spend eight to ten weeks during the summer conducting research. The research described in this planned program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:***	0.659	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Science of Artificial Intelligence ***Description:*** Artificial Intelligence (AI) will be a necessary component in a future multi-domain, battle-capable, force. However, the Naval operational environment is considerably more complex and unstructured than that experienced in the commercial sector, with unique constraints. The Science of AI planned program focuses on basic research that will create efficient computational methods for building versatile intelligent agents (physical and cyber) that can perform a variety of tasks in uncertain, unstructured and open-world environments and aid in command decision making. Research areas include human-inspired computational models of vision-language interactions for agents, mission-focused AI, and collaborative AI. The research areas described in this planned program were previously represented under the Mathematics, Computer, and Information Sciences planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	7.004	0.000	0.000	0.000	0.000
Title: Social Networks and Computational Social Science ***Description:*** Social Networks and Computational Social Science supports research in social science (anthropology, sociology, social psychology, etc.) for the study of social dynamics, human geography and human behavior relevant to Navy and Marine Corps missions. This program is pursuing research in big social changes that affect mission execution and success. Research in understanding important phenomena such as cyber-influence campaigns, the impact of climate change on human migration and human security concerns relevant to crisis response and humanitarian assistance are central thrusts in this program.	5.140	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The research areas described in this planned program were previously represented under the Human Systems planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Social, Cultural, and Behavioral Modeling, Social Networks and Computational Social Science, and Minerva Research Initiative. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: STEM for Warfighter Performance ***Description:*** The Science, Technology, Engineering, and Mathematics (STEM) for Warfighter Performance planned program addresses the critical need to grow and maintain a highly skilled technical naval workforce in research domains that will enhance warfighter effectiveness and efficiencies. These efforts inspire, engage, educate and attract participants to pursue naval careers and build the future extramural performer base. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.436	0.000	0.000	0.000	0.000
Title: Training and Education for Naval Readiness ***Description:*** Humans are at the core of every current and foreseeable Naval mission, whether they are assessing, coordinating and communicating decisions and actions across and within command echelons, planning and directing missions, controlling, managing or supervising systems in support of a mission, or directly executing the mission. The ability to select, train, sustain, maintain, and improve innate human competencies extends the warfighter's ability to meet current and anticipated needs. Creating synergies between	3.474	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
warfighters and their technologies positions naval forces to quickly pivot to meet and dominate future challenges. The science and resulting technologies enable streamlined talent management, enhance cognitive and physical performance, and augment warfighter-machine teaming for greater operational effectiveness. The research areas described in this planned program were previously represented under the Human Systems planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Schoolhouse Training, Attention in Sensory Processing and Intelligent Sensing, Manpower, Personnel, Training, and Education for Future Warfighting. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Warfighter Lethality and Survivability ***Description:*** In operational environments with limited communications and extensive use of autonomous and unmanned systems, commanders will rely even more on decentralized control enabled by cohesive human-machine teams. Physical and cognitive enhancement capabilities will ensure warfighters are ready to meet a wide range of unanticipated, complex, and dynamic challenges. The Warfighter Lethality and Survivability planned program focuses on basic research that will enhance warfighter performance attributes needed to execute distributed maritime operations. The research areas described in this planned program were previously represented under the Medical and Biological Sciences planned program in PE 0601153N Defense Research Sciences Project 0000. Research topics include Naval Force Health Protection, Physiological Monitoring and Modeling, Stress Response, and Undersea Medicine. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***	2.635	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Title: Young Investigator Program ***Description:*** The Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are early in their careers and show exceptional promise for performing creative research. The objectives of this program are to attract outstanding faculty members of U.S. Institutions of Higher Education to the Department of the Navy's Science and Technology research program, to support their research, and to encourage their teaching and research careers. This program was previously represented under the Science and Engineering Education, Career Development and Outreach planned program in PE 0601153N Defense Research Sciences Project 0000. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.456	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	34.061	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1393 / *Kinetic Weapons*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1393: *Kinetic Weapons*	0.000	6.729	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.729

Note

Investments in Project 1393 Kinetic Weapons are now funded in this same PE 0601153N under Project 1503 Directed Energy & Kinetic Systems.

A. Mission Description and Budget Item Justification

The Kinetic Weapons activity develops technologies to address the Navy and Marine Corps fires requirements for extended range, increased precision, decreased weapons fly-out times, greater destructive power, novel weapons effects, autonomy, human-machine teaming, reduced weapons costs, mission planning, and mass-producible swarming munitions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Advanced Energetic Materials ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.529	0.000	0.000	0.000	0.000
Title: Hypersonics ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.200	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	6.729	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1393 / *Kinetic Weapons*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1394 / *Manufacturing*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1394: *Manufacturing*	0.000	0.255	2.361	2.250	-	2.250	2.155	2.581	2.605	2.650	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Focus Area (FA) develops processes technologies that acquisition programs need to make the design, fabrication, construction, repair, and sustainment of naval platforms more affordable. This FA also supports manufacturing S&T that accelerates the delivery of capabilities to the fleet and force. Advanced manufacturing technologies include additive manufacturing, repair and sustainment technologies, and coupling computational tools from design to sustainment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Sea Warfare and Weapons STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.255	0.000	0.000	0.000	0.000
Title: Additive Manufacturing Materials ***FY 2026 Plans:*** - Initiate efforts in new in situ sensing modalities for high temperature Naval materials. - Initiate hybrid manufacturing science in understanding and designing material response during processing. ***FY 2027 Base Plans:*** - Continue efforts in new in situ sensing modalities for high temperature Naval materials. - Continue hybrid manufacturing science in understanding and designing material response during processing. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY2026 to FY2027.	0.000	0.713	0.669	0.000	0.669
Title: Computational Manufacturing Science ***FY 2026 Plans:*** - Initiate new efforts for computational tools for novel manufacturing design of alloys for manufacturing.	0.000	0.713	0.668	0.000	0.668

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1394 / *Manufacturing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate activities for autonomous discovery, testing and scale up for manufacturing. ***FY 2027 Base Plans:*** - Continue new efforts for computational tools for novel manufacturing design of high strength alloys for manufacturing. - Continue activities for autonomous discovery, testing and scale up for manufacturing/ qualification. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY2026 to FY2027.					
Title: Manufacturing Science ***FY 2026 Plans:*** - Initiate activities exploring sustainment science, intersections with synthetic manufacturing, and new processing science. - Continue both exploratory and confirmatory research with future naval application in manufacturing science research areas (realigned from project unit 1099). ***FY 2027 Base Plans:*** - Continue activities exploring sustainment science, intersections with synthetic manufacturing, and new processing science. - Continue both exploratory and confirmatory research with future naval application in manufacturing science research areas ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY2026 to FY2027.	0.000	0.935	0.913	0.000	0.913
Accomplishments/Planned Programs Subtotals	0.255	2.361	2.250	0.000	2.250

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1394 / *Manufacturing*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1395 / *Materials*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1395: *Materials*	0.000	56.582	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	56.582

Note

Investments in Project 1395 Materials are now funded in this same PE 0601153N under Project 1506 Materials/Electronics and 1402 Naval STEM, Outreach and Partnerships.

A. Mission Description and Budget Item Justification

This Focus Area (FA) enhances the performance, affordability, survivability, and reliability of the future fleet and force by developing materials with novel or enhanced properties suited to the unique needs of Navy and Marine Corps platforms and systems. Research relevant to enabling enhanced performance and resiliency of naval systems and platforms are included in this R-2 Activity

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Materials ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	7.728	0.000	0.000	0.000	0.000
Title: Sea Warfare and Weapons STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.807	0.000	0.000	0.000	0.000
Title: Expeditionary Materials ***FY 2026 Plans:***	0.823	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1395 / *Materials*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Materials and Chemistry ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	30.622	0.000	0.000	0.000	0.000
Title: Undersea Materials ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	0.219	0.000	0.000	0.000	0.000
Title: Functional Materials ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	7.690	0.000	0.000	0.000	0.000
Title: Structural Materials	7.693	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1395 / *Materials*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	56.582	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 1396 / *Naval Engineering*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1396: *Naval Engineering*	0.000	20.758	15.642	20.194	-	20.194	21.367	23.580	22.973	22.418	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Focus Area (FA) addresses the design, fabrication, integration, and operation of ground and sea naval warfare platforms, sensors, weapons, networks, and countermeasures to maximize their operational availability and effectiveness. Research efforts regarding all aspects of platform performance, platform survivability in support of future platform-building programs, platform autonomy, autonomous systems, and control for naval systems are included in this R-2 Activity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Platform Design and Engineering	15.751	5.000	4.830	0.000	4.830
Description: This research activity creates the foundational science necessary for a continuously evolving digital engineering ecosystem. by pushing the bounds of high-fidelity physics and modeling capability with the science of complexity and design theory to enable the seamless creation of naval systems in silico from conception through virtual testing from atomic level interactions through macroscopic scales. ***FY 2026 Plans:*** - Complete efforts in Adaptive Controls - Complete research in Wave Transport in Complex Media - Complete research efforts associated with Digital Data Science in Conditions Based Maintenance, Digital Threads, and Digital Twins. - Complete research in Non-Acoustic Signatures Science for Advanced Naval Platforms. - Complete research efforts related to System Complexity and Resilience for Naval Platforms and Systems focusing on morphing structures, composite structures and engineered materials (metamaterials). - Continue research related to Digital Engineering, Naval Engineering (a National Naval Responsibility area) and Platform Design to include effects of hydromechanics, propulsion, and fluid-structure interactions on system performance - Continue research in Platform Signature Modeling Sciences to include Structural Acoustics, Underwater Electromagnetic Signatures, Electromagnetic Signatures, Submarine Detectability, and Undersea Platform Susceptibility. - Continue research efforts in the Digital Decision Metrics for Naval Platform Design. - Initiate Autonomous Surface Vessel Design Science efforts specifically targeting					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
fundamental sciences for effective multi-fidelity simulations of complex systems in complex environments. ***FY 2027 Base Plans:*** - Continue research related to Digital Engineering, Naval Engineering (a National Naval Responsibility area) and Platform Design to include effects of hydromechanics, propulsion, and fluid-structure interactions on system performance - Continue research in Platform Signature Modeling Sciences to include Structural Acoustics, Underwater Electromagnetic Signatures, Electromagnetic Signatures, Submarine Detectability, and Undersea Platform Susceptibility. - Continue research efforts in the Digital Decision Metrics for Naval Platform Design. - Continue Uncrewed Surface Vessel Design Science efforts specifically targeting fundamental sciences for effective multi-fidelity simulations of complex systems in complex environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** No significant changes.					
Title: Sea Warfare and Weapons STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.818	0.000	0.000	0.000	0.000
Title: Expeditionary Naval Engineering ***Description:*** Addresses the basic research to enable new, fundamental advancements for naval expeditionary platforms, sensors, weapons, networks, and countermeasures in the future operating environment. ***FY 2026 Plans:***	2.189	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Resilient Naval System Science ***Description:*** The focus of this research activity is to provide the scientific foundation for creating resilient ground and sea-going naval systems. In essence, it is focused on the basic science topics that improve performance by reducing vulnerabilities and susceptibilities, improving maneuver, propulsion, recoverability. Core scientific thrusts include novel and new multi-material structures, propulsion and platform hydrodynamics, physics of energy and wave propagation involved with signatures, and multi-disciplinary scientific principles to effectuate susceptibility reduction and rapid recoverability. ***FY 2026 Plans:*** - Complete efforts in Structural Reliability Science - Complete efforts in Propulsion Hydromechanics - Complete efforts in Structural Acoustics - Complete efforts with the Centers for Innovative Naval Prototypes - Continue Novel Propulsion Physics efforts investigating next generation all-domain propulsion physics - Continue efforts in Engineered Materials (Metamaterials) for control of wave propagation in materials - Continue research into fluid-structure interactions specifically Turbulence and Flow Induced Noise and Vibration (Note that this work will be initiated in FY25) - Continue efforts in foundational scientific work of electromagnetic interaction of naval systems in complex hostile environments - Continue research in Non-Acoustic Signatures Science for Advanced Naval Platforms, to include Radio-Frequency Electromagnetic, Infrared, Electro-Optical, and Low-Frequency Electromagnetic physics. - Continue Resilient Structures efforts aimed at producing foundational work in structural configurations and materials to enable self-sustainable, self-repairable, and highly damage resistant structures. (Note that this work will be initiated in FY25) - Continue Multiscale Mechanics efforts to develop fundamental multiscale and	0.000	5.642	13.515	0.000	13.515

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Multiphysics mechanics theories that bridge the nano scale to the continuum scale to predict material and structural strength. (Note that this work will be initiated in FY25) - Continue Multiscale and Multiphysics modeling efforts to develop fundamental multiscale and Multiphysics hydrodynamics theories. (Note that this work will be initiated in FY25) - Continue both exploratory and confirmatory research with future naval application in Resilient Naval Systems Science and Engineering research areas (realigned from project unit 1099) - Continue research in Wave Transport in Complex Media - Initiate efforts in Chemical Physics at Interfaces efforts to understand basic scientific principles controlling solid/liquid interfacial interactions of complex physical systems. - Initiate efforts in Morphing Composite Structures and Controls for energy dissipation control					
FY 2027 Base Plans: - Complete research efforts related to Submarine Detectability - Continue efforts in Engineered Materials (morphing structures, composite structures and Metamaterials) for control of wave propagation in materials and fluid structure interactions - Continue Novel Propulsion Physics efforts investigating next generation all-domain propulsion physics - Continue research into fluid-structure interactions specifically Turbulence and Flow Induced Noise and Vibration - Continue efforts in foundational scientific work of electromagnetic interaction of naval systems in complex hostile environments - Continue research in Non-Acoustic Signatures Science for Advanced Naval Platforms, to include Radio-Frequency Electromagnetic, Infrared, Electro-Optical, and Low-Frequency Electromagnetic physics. - Continue Resilient Structures efforts aimed at producing foundational work in structural configurations and materials to enable self-sustainable, self-repairable, and highly damage resistant structures. - Continue Multiscale Mechanics efforts to develop fundamental multiscale and Multiphysics mechanics theories that bridge the nano scale to the continuum scale to predict material and structural strength. - Continue research in Wave Transport in Complex Media - Continue efforts in Chemical Physics at Interfaces efforts to understand basic scientific principles controlling solid/liquid interfacial interactions of complex physical systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue both exploratory and confirmatory research with future naval application in Resilient Naval Systems Science and Engineering research areas - Continue efforts in Morphing Composite Structures and Controls for energy dissipation control - Initiate efforts in Novel Flow Physics and Instrumentation to characterize complex flow physics in full-scale physics experiments - Initiate efforts in Maneuvering Dynamics and Complex Flows to understand complex hydrodynamics of maneuvering bodies at full scale. - Initiate Multiscale and Multiphysics modeling efforts to develop novel fundamental multiscale and Multiphysics hydrodynamics theories and models. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding Increase from FY 2026 to FY 2027 is due to increased research in Wave Transport in Complex Media, Platform Signature Related Sciences to include Electromagnetic Signatures, Acoustic Signatures, and Platform Detectability, and Dynamic Bonding in Naval Systems for reconfigurable and modular future systems.					
Title: Integrated Cyber-Physical Systems	0.000	5.000	1.849	0.000	1.849
Description: This research activity is focused on providing foundational research supporting future sea and ground systems and platform concepts that are highly integrated autonomous collaborative systems using advanced artificial intelligence to perceive and manipulate in highly contested and complex environments. ***FY 2026 Plans:*** - Complete efforts in basic research supporting Adaptive Systems controls aimed at providing advanced automation to crewed platform Hull, Mechanical, and Electrical systems. - Continue efforts in Vessel Systems Autonomy performing scientific research to support the unique challenges of uncrewed surface platforms in complex hostile future seas. - Continue efforts in Artificial Intelligent Large Language Model systems trained with Naval Engineering domain specific knowledge. - Initiate efforts in Dynamic Bonding for dynamic and controllable naval architectures ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts in Vessel Systems Autonomy performing scientific research to support the unique challenges of uncrewed surface platforms in complex hostile future seas. - Continue efforts in Artificial Intelligent Large Language Model systems trained with Naval Engineering domain specific knowledge. - Continue efforts in Dynamic Bonding for dynamic and controllable naval architectures - Initiate efforts in Chiplet Ecosystem Co-Design for advanced autonomous system ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced efforts in Vessel Systems Autonomy performing scientific research to support the unique challenges of uncrewed surface platforms in complex hostile future seas.					
Accomplishments/Planned Programs Subtotals	20.758	15.642	20.194	0.000	20.194

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1398 / *Ocean Atmosphere and Space Sciences*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1398: *Ocean Atmosphere and Space Sciences*	0.000	117.746	127.483	114.939	-	114.939	122.169	128.743	119.449	116.329	Continuing	Continuing

Note

All Expeditionary Investments in Project 1398 Ocean Atmosphere and Space Sciences have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) was established by Congress in 1946 to plan, foster and encourage scientific research in recognition of its paramount importance to the maintenance of future naval power and national security; to provide within the Department of the Navy a single office, which, by contract and otherwise, shall be able to obtain, coordinate, and make available to all bureaus and activities of the Department of the Navy, world-wide scientific information and the necessary services for conducting specialized and imaginative research; to establish a Naval Research Advisory Committee consisting of persons preeminent in the fields of research, to consult with and advise the Chief of such Office in matters pertaining to research The Office of Naval Research shall perform such duties as the Secretary of the Navy prescribes relating to the execution of, and management responsibility for, programs for which funds are provided in the basic and applied research and advanced technology categories of the Department of the Navy research, development, test, and evaluation budget in such a manner that will foster the transition of science and technology to higher levels of research, development, test, and evaluation.

This Program Element (PE) supports the Basic Research portion of the Department of the Navy (DON) science and technology (S&T) portfolio, laying the foundation for new innovative technologies and future capabilities for Naval warfighters. Efforts within this PE address Ocean Atmosphere and Space Sciences.

Ocean Battlespace Sensing research activities span a number of disciplines in support of Navy and Marine Corp operational missions. This research area supports theoretical and experimental investigations directed toward increasing knowledge and understanding of the physical, chemical, engineering, environmental and life sciences fundamental to naval operations, including expeditionary operations. Naval Operations research areas will include mine warfare, mine countermeasures, ocean acoustics, naval special warfare (governed by Littoral Geosciences), the reliable use of unmanned/robotic systems, autonomous operations, remote sensing, anti-submarine warfare, ocean engineering, artic operations, marine mammals/biology, physical oceanography, metrology/METOC and emerging undersea warfare capabilities.

The majority of research conducted within this PE is performed by academia and government labs, both of which play significant roles in developing the S&T workforce of tomorrow in addition to delivering new knowledge and scientific discoveries.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Ocean Sciences	70.422	68.112	54.908	0.000	54.908

Description: The Ocean, Atmosphere & Space Science program advances our understanding of atmospheric and space phenomena/processes which, during naval operations, may range from the seabed, to surface sea-state conditions to high altitude space sensing. Highly dynamic conditions researched within this PE include artic conditions, ocean acoustics, coastal and seabed geoscience, meteorology, anti-submarine operations, mine counter measures, marine mammal biology and maritime sensing. Basic research advances improve the precision and reliability of ocean, atmospheric and space environmental products provided to the warfighter and allow for increasingly accurate assessments and predictions of the impact of space and atmospheric phenomena on the performance of naval weapon systems.

Understanding and predicting oceanographic and acoustical phenomena provides significant warfighting advantages to naval forces. Ocean Sciences research addresses the full spectrum of acoustics and oceanography to enable observation, modeling, and prediction of the maritime environment. Efforts include: studying common operating areas for naval forces in the open oceans, the Arctic, the littorals, and nearshore and river mouths and inlet environments; elucidating the coupling between oceanographic, geophysical and acoustical phenomena relevant to mission areas such as Anti-Submarine Warfare and Mine Warfare; development of global, regional and local predictive models that fully couple the ocean-atmosphere-wave-ice domains; development and use of autonomous systems and sampling technologies for the collection of environmental observations and continuing support to research vessels of the U.S. Academic Research Fleet to enable at-sea oceanographic science.

Naval Expeditionary Forces need science advances to address a range of research challenges that result from physical and operational environmental limitations so harsh that solutions push basic discovery and invention. Naval Expeditionary Forces operate amphibiously and in the littoral will have all of their capabilities exposed to degrading sea and land physical effects. Expeditionary forces must be agile and lethal but will be constrained by size, weight, and power requirements and must be sustained across large areas. Research efforts within this Project (previously aligned within the Sciences Addressing Hybrid Threats (SAHT) research area of Project 0000) include optics, electronics, and photonics research to enable revolutionary spectral awareness in small low power sensors.

The Science and Engineering Education, Career Development and Outreach research activities address the critical need to grow and maintain a highly skilled technical naval workforce. These efforts inspire, engage,

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
educate and attract participants to pursue naval careers and build the extramural performer base. DON Science, Technology, Engineering and Math (STEM) education and outreach is designed to increase the number of students and naval civilians with naval-relevant skills and degrees, expand capabilities of the current and future workforce by augmenting education and increasing the awareness of Naval Ocean Battlespace Sensing research and career opportunities through localized education and outreach activities that foster the talent pipeline. ***FY 2026 Plans:*** - Continue research investigations to improve the quality of the environmental analysis and prediction provided in support of warfighters, including the assessment of the impact of the atmosphere and ionosphere-thermosphere-magnetosphere on the performance of sensors, platforms and weapon systems, and the advancement of our basic understanding of atmospheric processes across spatial scales and the interactions of the atmosphere with the land, sea, wave, ice, and thermosphere. - Continue research efforts to exploit environmental observations and to characterize environmental processes more accurately, thus providing improved forecast models for the Navy and Marine Corps in regions where operations take place, including: the littoral zone, where complex topography and air-sea-land contrasts impact the environment on very short time and space scales; the tropics and sub-tropics; and the Arctic, where longer time scale atmospheric changes affect short-term weather events. - Continue research on the coupled processes in the high atmosphere, between the troposphere and stratosphere and the stratosphere/mesosphere and ionosphere and their effect on weather and space weather prediction. (NRL) - Continue research efforts regarding atmospheric or Earth system coupled processes that are not well understood (cloud and aerosol interactions, etc.), marine boundary layer and coastal prediction, and diurnal and mesoscale variability to improve their representation in forecast models. - Continue research efforts regarding marine atmospheric boundary layer gradients and processes important for low and mid-cloud evolution and structure. - Continue research investigations regarding key physical processes (marine atmospheric clouds, moisture and aerosol phenomena, etc.) to improve their representation in weather prediction models. - Continue research investigations of new and non-conventional observational data sources and novel methodologies for their assimilation into operational predictive models. - Continue efforts regarding the deployment of observing systems in the upper troposphere, middle and upper atmosphere and the near-space environment to allow extension of prediction systems into the middle and upper atmosphere and provide longer and higher fidelity forecasts.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research investigations regarding the distribution, transport and time evolution of aerosols in the atmosphere and their impact on atmospheric visibility and laser propagation. - Continue new research in satellite-based environmental remote sensing algorithms and techniques tailored to improved retrievals for phenomena and regions of particular Naval interest. - Continue new research in atmospheric river dynamics and interaction with global circulation and air-sea interaction for improved prediction of extreme events and error modes for extended range forecasts. - Continue new research in the use of signals of opportunity such as GNSS radio occultation, reflectometry, and other anomalous propagation modes as a means to provide insight into the structure of the atmosphere and ocean surface that they are propagating through. Littoral Geosciences and Optics research efforts address nonlinear coupling between atmospheric phenomena and surface/waves, sediment transport dynamics, and the study of bathymetric environments using field observations, modeling, and remote sensing data. Research efforts aligned to this area include the following: - Continue studies of surface gravity waves, currents, tides and internal wave processes along rocky coastlines. - Continue autonomous, scalable, hydrographic charting and coastal parameter sampling studies with concomitant remote sensing for data-assimilative coastal models. - Continue research using airborne and satellite active and passive microwave sensors, overhead optical sensors, and ship or shore-based radars to observe coastal and nearshore phenomena. - Continue studies of the dynamics of shallow coastal inlets; specific areas include their formation and maintenance processes by tides, waves, currents, discharge and sediment type and supply. - Continue research to predict physical, geological, geochemical, geo-acoustic and geotechnical properties of the seafloor in shallow-water coastal environments. - Continue research investigations of sub-seabed geophysical properties. - Complete field studies of coastal oceanographic phenomena using sonar-equipped autonomous underwater vehicles in conjunction with ground-based, airborne and satellite remote sensing. The 'Space Research' program explores innovative sensor development, physics-based modeling and forecasting efforts integrated across the geo-space environmental research areas. Geospace research efforts include: - Continue research into affordable small-sat sensors to investigate and specify the three dimensional structure and evolution of the electromagnetic signal propagation environment in the ionosphere, including ionospheric bubbles. Employ stereo imaging and tomographic reconstruction to access the three dimensional structure and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
evolution of the upper atmosphere and ionosphere, relevant to Naval communications, intelligence, surveillance and reconnaissance, and geolocation. - Continue development of our understanding and computational representation of upper atmospheric, ionospheric relevant plasma processes and their coupling to the lower atmosphere and solar inputs, towards a future physics-based ionospheric prediction capability. - Continue development of new imaging techniques to examine the structure and evolution of additional airglow chemical species in the ionosphere for dayside and nightside processes. - Continue the development of new neutral density atmospheric observations for the mesosphere. - Continue observational research in polar ionospheric processes for improved regional prediction of the ionosphere at high latitudes. - Continue efforts into understanding basic plasma processes in the near-earth space to protect and understanding the effects on Naval C4ISR capabilities. The 'Physical Oceanography and Prediction' research area explores ocean circulation, thermodynamics and mixing, and the dynamics of surface gravity waves, nonlinear internal waves and the interaction of waves with sea ice in order to understand the sub-mesoscale physical oceanography parameters from the tropics to the poles. Sub-mesoscale understanding of the ocean is necessary to support the required fidelity and accuracy of ocean feature inputs to Naval warfighting applications. Research efforts include the following: - Continue research efforts exploring novel expeditionary ocean instrumentation to support targeted observing. - Continue research regarding the study of ocean fronts, eddies and turbulence; ocean thermodynamics including mixing and acoustic impacts; and ocean boundary layer processes and surface gravity waves. - Continue research investigations of the rapid evolution of the upper ocean in the high North Atlantic between Iceland and the European continent to understand the physical processes that control vertical and horizontal density structures in the upper ocean. - Continue research efforts to explore the cascade of energy in the sub-mesoscale ocean, including the physics and dynamics of ocean features such as current meanders, vortices, and filaments, with a field program in the Western Pacific, to expand the knowledge of the lifecycle of these features and enable improved predictions. - Complete research investigations of three-dimensional Lagrangian ocean circulation and the prediction of vertical pathways in field experiments in the Mediterranean Sea. - Complete research regarding the seasonal variability of processes that control sea surface temperature in the Arabian Sea to understand the relevant space and time scales that enable improved ocean and weather forecasts through the reduction of ocean temperature biases in coupled models.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research investigations of air-sea interaction in the Arabian Sea to understand the origin of monsoon moisture and precipitation biases that exist in all coupled earth system models (including the Navy's forecasting system) at sub-seasonal and shorter timescales. Program will leverage new observations of the ocean and atmosphere collected with regional partners. The 'Arctic Sciences' research area explores complex processes governing the interaction of the arctic atmosphere, ocean, and sea ice, including formation, deformation, and melting. The physical processes in the arctic are inherently different from those in non-polar regions. Research efforts include: - Continue research efforts to characterize the behavior of sea ice, including melt and reformation, ice rheology and motion, and interactions with ocean stratification, surface waves and the atmosphere. - Continue research investigations regarding the development of Arctic System models and data assimilation techniques for improved prediction of the Arctic region and development of new sensors and unmanned platforms to collect observations of the Arctic environment. - Continue research development of algorithms enabling the space-based remote sensing of bulk properties of Arctic sea-ice that previously could be sampled only by localized in-situ methods. - Continue research efforts into studies of the circulation of the Arctic Ocean to explore the fate of heat flowing in through the Bering Strait and the impact on the upper ocean density structure of the Beaufort Sea. The Ocean Acoustics research area addresses a National Naval Responsibility (NNR) S&T investment area considered critical to the naval services where the Navy has historically taken the lead to ensure decisive naval capability in the maritime domain. The Ocean Acoustics research program conducts basic research addressing the fundamental understanding of the physics, mathematics, and engineering principles related to the generation, propagation, scattering, reception, and processing of underwater sound. Investigations may involve passive or active acoustics, along with theoretical and/or experimental approaches and model development. OA is inherently multidisciplinary and highly intertwined with physical, biological, and chemical processes that comprise the field of oceanography. Core areas of research include the generation, propagation and scattering of acoustic (and elastic) waves in temporally and spatially-varying ocean environments; the temporal, spatial, and frequency dependence of ocean ambient sound and characteristics of source generating mechanisms that contribute to the overall sound field; extracting information from acoustic signals that reveal information about the ocean environment - including characteristics of, and biogeochemical processes occurring at, the air-sea interface or the seafloor and within the ocean volume. Knowledge and expertise generated by basic research in OA supports operationally motivated experimentation conducted under the Task Force Ocean (PE 0602435N), mine and obstacle detection (PE 0602782N) and provides the underpinning of operational					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
models for planning and decision making. Ever increasing skill in underwater acoustic prediction capability is essential to keep our undersea assets undetected as well as to enable the detection and tracking of adversary assets. Research efforts planned in Ocean Acoustics under this PE include: - Continue research to understand propagation and scattering of acoustic energy in shallow-water ocean environments. Specific efforts include shallow-water acoustic measurements supporting geoacoustic inversion; acoustic propagation through internal waves and coastal ocean processes and the development of unified ocean/seabed/acoustic models, including scattering from rough surfaces, biologics and bubbles; penetration/ propagation within the porous seafloor; and scattering mechanisms within the ocean volume, or related to the seabed, as a cause of reverberation and clutter. - Continue research into the effects of environmental variability, stratification, and mixing induced by ocean internal waves, internal tides and mesoscale processes, and by bathymetric features including seamounts and ridges, on the stability, statistics, spatial distribution, and predictability of broadband acoustic signals, as well as the coherence and depth dependence of deep-water ambient noise. - Continue joint field studies combining physical oceanography and acoustics to investigate propagation and scattering in regions characterized by complex bathymetry and/or meteorological and oceanographic forcing. Specific efforts will include processes studies aimed at characterizing the relationship between different oceanographic phenomena and the effects on acoustic propagation and scattering at different frequencies. - Continue efforts in characterizing, parameterizing, and model development for sediment acoustic properties. Specific efforts will include analysis of data from the acoustic seabed characterization experiments conducted between 2015 and 2023. Analysis will include development and verification of geoacoustic models and inference techniques for mud, clay, and other fine-grained sediments based on the experimental evidence. - Continue research efforts aimed at optimally representing information contained in acoustic data. Efforts will focus on novel methods of extraction and processing data including those inspired by cognitive processing. Specific efforts will include the investigation of summary statistics and sparse encoding of underwater acoustic data with the objective of enabling efficient analysis and compact representations of acoustic scenes. - Continue research efforts on auralization refocused on applicability to understanding the maritime acoustic environment for characterizing the ocean battlespace. Specific efforts will include investigations into source separation, characterization, and recombination along with physical, biological, and anthropogenic sound generating mechanisms. An objective is to parameterize and develop models for acoustic phenomena in undersea environments to enable a capability for predicting the acoustic environment. - Continue analysis of data from a previous trans-arctic basin collection effort and initiate additional studies to account for changing conditions on acoustic propagation and ambient noise, particularly in under-ice					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
environments. Specific efforts will include field studies focused on collecting long-time series data in support of acoustic thermometry in the changing arctic. - Continue investigations of biogeochemical processes occurring near and within the seabed that impact the acoustic properties of the seabed. Specific efforts will include investigations aimed at linking local physical and biological processes to geoacoustic properties of the seabed and which have an impact on acoustic propagation and scattering. - Continue investigations on acoustical oceanography with the objective of extracting information related to earth-system processes, and/or biologic or human activities from ocean sound. Specific activities will include feasibility studies to be conducted in the Gulf of Maine in partnership with the Northeastern Regional Association of Coastal Ocean Observing Systems. Other activities will investigate and seek to develop relationships between the sound generated by or associated with physical processes such as deglaciation and air-sea gas exchange. - Continue research efforts aimed at developing approaches to entraining and educating a workforce capable of responding to future requirements and maintaining U.S. leadership in the critically important discipline of Ocean Acoustics. Specific efforts will include investigations into the feasibility and value of micro-credentials, specialized workshops or intensives, bootcamps, and other non-traditional educational approaches. The 'Marine Mammals and Biology' research program conducts basic research to understand and characterize the effects of sound exposure on marine mammals to enable Navy to meet operational training and testing objectives in an environmentally responsible and legal manner. Areas of research include monitoring and detection of marine mammals, integrated ecosystem research, hearing in large whales, and effects of sound on marine mammals. Research activity in this area includes: - Continue research efforts regarding the development and testing of new and existing technologies to detect, classify, localize and potentially track marine mammals. - Continue multidisciplinary ecosystem research including tagging, visual surveys, and passive acoustics to collect baseline measures of marine mammal behaviors and distributions relative to environmental features and marine mammal prey fields. - Continue research investigations of sound reception mechanisms in large whales. - Continue research efforts regarding the effects of sound include behavioral, physiological and population-level consequences of sound exposure on marine life. - Continue research investigations to characterize and quantify the cumulative effects of multiple stressors on marine mammal populations.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research to develop framework for understanding the ecology of eDNA, including the origin, state, transport, and fate of extra-organismal genetic material. - Continue studies to design appropriate primers and bioinformatics workflows to effectively and efficiently detect and identify target biological communities and ecosystems, and advance our understanding of the relationships between eDNA and the abundance of marine megafauna. - Continue opportunities for students to participate in Navy and Marine Corps-relevant Ocean Battlespace Sensing research within the Naval Research Enterprise (NRE), at Naval Warfare Centers and Laboratories, by expanding the number of participating sites, mentors, and interns. - Continue to provide innovative research opportunities, such as faculty fellowships and student internships, that address critical Naval Ocean Battlespace Sensing S&T challenges through collaborations between academic researchers and Naval scientists and engineers. - Continue advancing Naval Ocean Battlespace Sensing relevant research, by cultivating long-term HBCU/MI partnerships that leverage knowledge sharing and empower scientific global discovery. - Continue Naval Ocean Battlespace Sensing outreach initiatives to increase the number of HBCU/MI research opportunities and grant proposal submissions. - Continue efforts to increase HBCU/MI Post-doctoral program participation in the Ocean Battlespace Sensing research program - Continue Young Investigator Program (YIP) topics selected in fiscal year 2024. - Continue both exploratory and confirmatory research with future naval application in Ocean Sciences research areas (realigned from project unit 1099).					
FY 2027 Base Plans: - Continue research investigations to improve the quality of the environmental analysis and prediction provided in support of warfighters, including the assessment of the impact of the atmosphere and ionosphere-thermosphere-magnetosphere on the performance of sensors, platforms and weapon systems, and the advancement of our basic understanding of atmospheric processes across spatial scales and the interactions of the atmosphere with the land, sea, wave, ice, and thermosphere. - Continue research efforts to exploit environmental observations and to characterize environmental processes more accurately, thus providing improved forecast models for the Navy and Marine Corps in regions where operations take place, including: the littoral zone, where complex topography and air-sea-land contrasts impact the environment on very short time and space scales; the tropics and sub-tropics; and the Arctic, where longer time scale atmospheric changes affect short-term weather events.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on the coupled processes in the high atmosphere, between the troposphere and stratosphere and the stratosphere/mesosphere and ionosphere and their effect on weather and space weather prediction. (NRL) - Continue research efforts regarding atmospheric or Earth system coupled processes that are not well understood (cloud and aerosol interactions, etc.), marine boundary layer and coastal prediction, and diurnal and mesoscale variability to improve their representation in forecast models. - Continue research efforts regarding marine atmospheric boundary layer gradients and processes important for low and mid-cloud evolution and structure. - Continue research investigations regarding key physical processes (marine atmospheric clouds, moisture and aerosol phenomena, etc.) to improve their representation in weather prediction models. - Continue research investigations of new and non-conventional observational data sources and novel methodologies for their assimilation into operational predictive models. - Continue efforts regarding the deployment of observing systems in the upper troposphere, middle and upper atmosphere and the near-space environment to allow extension of prediction systems into the middle and upper atmosphere and provide longer and higher fidelity forecasts. - Continue research investigations regarding the distribution, transport and time evolution of aerosols in the atmosphere and their impact on atmospheric visibility and laser propagation. - Continue new research in satellite-based environmental remote sensing algorithms and techniques tailored to improved retrievals for phenomena and regions of particular Naval interest. - Continue new research in atmospheric river dynamics and interaction with global circulation and air-sea interaction for improved prediction of extreme events and error modes for extended range forecasts. - Continue new research in the use of signals of opportunity such as GNSS radio occultation, reflectometry, and other anomalous propagation modes as a means to provide insight into the structure of the atmosphere and ocean surface that they are propagating through. The 'Marine Meteorology Analysis and Prediction' research area includes the following: - Complete research efforts regarding marine atmospheric boundary layer gradients and processes important for low and mid-cloud evolution and structure. - Complete research investigations regarding key physical processes (marine atmospheric clouds, moisture and aerosol phenomena, etc.) to improve their representation in weather prediction models. - Continue research investigations of new and non-conventional observational data sources and novel methodologies such as ML/AI methods for their assimilation into operational predictive models.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts regarding the deployment of observing systems in the upper troposphere, middle and upper atmosphere and the near-space environment to allow extension of prediction systems into the middle and upper atmosphere and provide longer and higher fidelity forecasts. - Continue research investigations regarding the distribution, transport and time evolution of aerosols in the atmosphere and their impact on atmospheric visibility and laser propagation. - Continue new research in satellite-based environmental remote sensing algorithms and techniques tailored to improved retrievals for phenomena and regions of particular Naval interest. - Continue new research in atmospheric river dynamics and interaction with global circulation and air-sea interaction for improved prediction of extreme events and error modes for extended range forecasts. - Continue new research in the use of signals of opportunity such as GNSS radio occultation, reflectometry, and other anomalous propagation modes as a means to provide insight into the structure of the atmosphere and ocean surface that they are propagating through. - Initiate new research into mesospheric processes and transport between the stratosphere and the thermosphere. - Initiate new research into moisture transport between the Arctic and mid-latitudes for improved understanding and prediction of high impact weather. - Initiate new research into novel low order models for prediction of operational weather impacts at the edge for austere and communications limited environments. The 'Space Research' program explores innovative sensor development, physics-based modeling and forecasting efforts integrated across the geo-space environmental research areas. Geospace research efforts include: - Continue research into affordable small-sat sensors to investigate and specify the three dimensional structure and evolution of the electromagnetic signal propagation environment in the ionosphere, including ionospheric bubbles. Employ stereo imaging and tomographic reconstruction to access the three dimensional structure and evolution of the upper atmosphere and ionosphere, relevant to Naval communications, intelligence, surveillance and reconnaissance, and geolocation. - Continue development of our understanding and computational representation of upper atmospheric, ionospheric relevant plasma processes and their coupling to the lower atmosphere and solar inputs, towards a future physics-based ionospheric prediction capability. - Continue development of new imaging techniques to examine the structure and evolution of additional airglow chemical species in the ionosphere for dayside and nightside processes. - Continue the development of new neutral density atmospheric observations for the mesosphere.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue observational research in polar ionospheric processes for improved regional prediction of the ionosphere at high latitudes. - Continue efforts into understanding basic plasma processes in the near-earth space to protect and understanding the effects on Naval C4ISR capabilities. The Ocean Acoustics research area addresses a National Naval Responsibility (NNR) S&T investment area considered critical to the naval services where the Navy has historically taken the lead to ensure decisive naval capability in the maritime domain. The Ocean Acoustics research program conducts basic research addressing the fundamental understanding of the physics, mathematics, and engineering principles related to the generation, propagation, scattering, reception, and processing of underwater sound. Investigations may involve passive or active acoustics, along with theoretical and/or experimental approaches and model development. OA is inherently multidisciplinary and highly intertwined with physical, biological, and chemical processes that comprise the field of oceanography. Core areas of research include the generation, propagation and scattering of acoustic (and elastic) waves in temporally and spatially-varying ocean environments; the temporal, spatial, and frequency dependence of ocean ambient sound and characteristics of source generating mechanisms that contribute to the overall sound field; extracting information from acoustic signals that reveal information about the ocean environment - including characteristics of, and biogeochemical processes occurring at, the air-sea interface or the seafloor and within the ocean volume. Knowledge and expertise generated by basic research in OA supports operationally motivated experimentation conducted under the Task Force Ocean (PE 0602435N), mine and obstacle detection (PE 0602782N) and provides the underpinning of operational models for planning and decision making. Ever increasing skill in underwater acoustic prediction capability is essential to keep our undersea assets undetected as well as to enable the detection and tracking of adversary assets. Research efforts planned in Ocean Acoustics under this PE include: -Continue research to understand propagation and scattering of acoustic energy in shallow-water ocean environments. Specific efforts include shallow-water acoustic measurements supporting geoacoustic inversion; acoustic propagation through internal waves and coastal ocean processes and the development of unified ocean/seabed/acoustic models, including scattering from rough surfaces, biologics and bubbles; penetration/ propagation within the porous seafloor; and scattering mechanisms within the ocean volume, or related to the seabed, as a cause of reverberation and clutter. - Continue research into the effects of environmental variability, stratification, and mixing induced by ocean internal waves, internal tides and mesoscale processes, and by bathymetric features including seamounts and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
ridges, on the stability, statistics, spatial distribution, and predictability of broadband acoustic signals, as well as the coherence and depth dependence of deep-water ambient noise. - Continue joint field studies combining physical oceanography and acoustics to investigate propagation and scattering in regions characterized by complex bathymetry and/or meteorological and oceanographic forcing. Specific efforts will include processes studies aimed at characterizing the relationship between different oceanographic phenomena and the effects on acoustic propagation and scattering at different frequencies. - Continue efforts in characterizing, parameterizing, and model development for sediment acoustic properties. Specific efforts will include analysis of data from the acoustic seabed characterization experiments conducted between 2015 and 2023. Analysis will include development and verification of geoacoustic models and inference techniques for mud, clay, and other fine-grained sediments based on the experimental evidence. - Continue research efforts aimed at optimally representing information contained in acoustic data. Efforts will focus on novel methods of extraction and processing data including those inspired by cognitive processing. Specific efforts will include the investigation of summary statistics and sparse encoding of underwater acoustic data with the objective of enabling efficient analysis and compact representations of acoustic scenes. - Continue research efforts on auralization refocused on applicability to understanding the maritime acoustic environment for characterizing the ocean battlespace. Specific efforts will include investigations into source separation, characterization, and recombination along with physical, biological, and anthropogenic sound generating mechanisms. An objective is to parameterize and develop models for acoustic phenomena in undersea environments to enable a capability for predicting the acoustic environment. - Continue analysis of data from a previous trans-arctic basin collection effort and continue additional studies on acoustic propagation and ambient noise, particularly in under-ice and dynamic ice environments. Specific efforts will include field studies focused on collecting long-time series data in support of acoustic thermometry in the arctic. - Continue investigations of biogeochemical processes occurring near and within the seabed that impact the acoustic properties of the seabed. Specific efforts will include investigations aimed at linking local physical and biological processes to geoacoustic properties of the seabed and which have an impact on acoustic propagation and scattering. - Continue investigations on acoustical oceanography with the objective of extracting information related to earth-system processes, and/or biologic or human activities from ocean sound. Conclude feasibility study					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
conducted in the Gulf of Maine in partnership with the Northeastern Regional Association of Coastal Ocean Observing Systems. Other activities will investigate and seek to develop relationships between the sound generated by or associated with physical processes such as deglaciation and air-sea gas exchange. - Continue research efforts aimed at developing approaches to entraining and educating a workforce capable of responding to future requirements and maintaining U.S. leadership in the critically important discipline of Ocean Acoustics. Specific efforts will include investigations into the feasibility and value of micro-credentials, specialized workshops or intensives, bootcamps, and other non-traditional educational approaches. Littoral Geosciences and Optics research efforts address nonlinear coupling between atmospheric phenomena and surface/waves, sediment transport dynamics, and the study of bathymetric environments using field observations, modeling, and remote sensing data. Research efforts aligned to this area include the following: - Continue studies of surface gravity waves, currents, tides and internal wave processes along rocky coastlines. - Conclude autonomous, scalable, hydrographic charting and coastal parameter sampling studies with concomitant remote sensing for data-assimilative coastal models. - Continue research using airborne and satellite active and passive microwave sensors, overhead optical sensors, and ship or shore-based radars to observe coastal and nearshore phenomena. - Continue studies of the dynamics of shallow coastal inlets; specific areas include their formation and maintenance processes by tides, waves, currents, discharge and sediment type and supply. - Continue research to predict physical, geological, geochemical, geo-acoustic and geotechnical properties of the seafloor. - Continue research investigations of sub-seabed geophysical properties. - Complete field studies of coastal oceanographic phenomena using sonar-equipped autonomous underwater vehicles in conjunction with ground-based, airborne and satellite remote sensing. The Marine Biology (MB) program, formerly titled the Marine Mammals and Biology (MMB) Program in FY26 and prior, aims to provide a warfighting advantage across three key areas: 1) tactically and 2) operationally within the ocean battlespace through enhanced understanding of marine species distribution and abundance, and 3) strategically, by preserving Navy readiness and ensuring compliance with legal requirements during at-sea training and testing. The program supports basic and applied research and technology development to improve maritime domain awareness of marine species, enabling better characterization and prediction of their effects on naval systems (e.g., sonar performance). Improved domain awareness and Navy readiness at a large scale will ensure the U.S. Navy's at-sea testing and training requirements are informed by accurate, up-to-date, and comprehensive scientific data of the baseline conditions in which they operate. Furthermore, the MB program					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
investigates the impacts of naval activities on marine species at the behavioral, physiological, ecological, and population levels. Research activity in this area includes: Continue development and testing of new and existing technologies to detect, classify, localize and potentially track marine species. Continue multidisciplinary ecosystem research including tagging, visual surveys, and passive acoustics to collect baseline measures of marine species behaviors and distributions relative to environmental features and marine mammal prey fields. Continue research on sound reception mechanisms in large whales. Continue research on the effects of sound include behavioral, physiological and population-level consequences of sound exposure on marine life. Continue studies to characterize and quantify the cumulative effects of multiple stressors on marine species populations. Continue research to develop framework for understanding the ecology of eDNA, including the origin, state, transport, and fate of extraorganismal genetic material. Continue studies to design appropriate primers and bioinformatics workflows to effectively and efficiently detect and identify target biological communities and ecosystems and advance our understanding of the relationships between eDNA and the abundance of marine megafauna. The 'Physical Oceanography and Prediction' research area explores ocean circulation, thermodynamics and mixing, and the dynamics of surface gravity waves, nonlinear internal waves and the interaction of waves with sea ice in order to understand the sub-mesoscale physical oceanography parameters from the tropics to the poles. Sub-mesoscale understanding of the ocean is necessary to support the required fidelity and accuracy of ocean feature inputs to Naval warfighting applications. Research efforts include the following: - Continue research efforts exploring novel expeditionary ocean instrumentation to support targeted observing.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research regarding the study of ocean fronts, eddies and turbulence; ocean thermodynamics including mixing and acoustic impacts; and ocean boundary layer processes and surface gravity waves. -Finalize analysis for research investigations of the rapid evolution of the upper ocean in the high North Atlantic between Iceland and the European continent to understand the physical processes that control vertical and horizontal density structures in the upper ocean. -Finalize analysis for research efforts to explore the cascade of energy in the sub-mesoscale ocean, including the physics and dynamics of ocean features such as current meanders, vortices, and filaments, with a field program in the Western Pacific, to expand the knowledge of the lifecycle of these features and enable improved predictions. -Continue research investigations of air-sea interaction in the northern Indian Ocean to understand the origin of monsoon moisture and precipitation biases that exist in all coupled Earth system models (including the Navy's forecasting system) at sub-seasonal and shorter timescales. -Initiate research for interior Lagrangian trajectories to improve prediction of ocean structure and refine acoustic navigation of autonomous systems in gps-denied scenarios The 'Arctic Sciences' research area explores complex processes governing the interaction of the arctic atmosphere, ocean, and sea ice, including formation, deformation, and melting. The physical processes in the arctic are inherently different from those in non-polar regions. Research efforts include: - Continue research efforts to characterize the behavior of sea ice, including melt and reformation, ice rheology and motion, and interactions with ocean stratification, surface waves and the atmosphere. - Continue research investigations regarding the development of Arctic System models and data assimilation techniques for improved prediction of the Arctic region and development of new sensors and unmanned platforms to collect observations of the Arctic environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research development of algorithms enabling the space-based remote sensing of bulk properties of Arctic sea-ice that previously could be sampled only by localized in-situ methods ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease due to completion of research investigations of three-dimensional Lagrangian ocean circulation and the prediction of vertical pathways in field experiments in the Mediterranean Sea and research regarding the seasonal variability of processes that control sea surface temperature in the Arabian Sea to understand the relevant space and time scales that enable improved ocean and weather forecasts through the reduction of ocean temperature biases in coupled models.					
Title: Expeditionary Ocean Atmosphere and Space Sciences ***Description:*** Supports new phenomenological studies to enable fundamentally new advancements in support of all domain naval expeditionary applications in the future operating environment. ***FY 2026 Plans:*** - Continue research to understand nearshore and littoral environmental effects on future multidomain expeditionary operations. (Expeditionary Warfare) - Complete research efforts in sensors and sensing technologies to enable stand-off detection and rapid neutralization of explosive hazards in multiple expeditionary mission environments while maintaining operational tempo. (Expeditionary Warfare) - Initiate study of littoral mud flats and shorelines by investigating interlinked processes such as soil-sea-ice-air and benthic Life Interactions. Methods and investigation should include theory, modeling, field and remote sensing/satellite based focus areas for global understanding. (Expeditionary Warfare) - Initiate research to develop a quantitative numerical representation of mesospheric Atmospheric Gravity Wave (AGW) coupling to Traveling Ionospheric Disturbances (TID) that is underpinned by the theoretical models while matching the current observationally based empirical models. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	2.336	3.081	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and naval priorities.					
Title: Battlespace Environments	19.867	25.804	31.318	0.000	31.318
FY 2026 Plans: - Continue research into Atmospheric Processes to improve understanding of complex atmospheric processes across scales, exploring innovative strategies for observing, representing, and predicting. Encompasses atmospheric processes, coupled systems (land/wave/ocean/ice/atmosphere), aerosols, and forecast uncertainty. Includes projects utilizing novel computational platforms to enhance understanding or accuracy. - Continue research into Environmental Sensing to enhance remote sensing capabilities for battlespace environment constituents and phenomena, crucial for situational awareness and driving models. This involves understanding phenomenology, creating new sensors, and generating models mapping observations to requirements. Efforts improve understanding of physical processes and signatures of oceanographic, atmospheric, littoral, and inland domains (soil, vegetation, waves, bio-optics, air-sea interface), and environmentally impacted sensing. - Continue efforts into Oceanographic Process for improved understanding of physical/biological processes on Naval scales, emphasizing measurement and prediction. Objectives: quantify/understand processes leading to dynamic models (global to submesoscale),and develop methods for model validation. - Continue research into Geosciences Processes to understand processes generating/modifying the fluid-sediment bottom boundary layer across Naval areas. Research addresses predictive model approaches representing seabed physics and uncertainty influences. - Continue research into Data Assimilation Process to exploit environmental sensing data for optimal estimates, enabling numerical predictions, parameter estimation, and uncertainty quantification. Transforms sensing into forecasts. Investigates error characterization, novel techniques, incorporating new sensing, and tractable theory. Covers seabed, littoral, ocean, waves, ice, land, atmosphere, coupled systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts into Middle Atmosphere Processes supporting measurements/modeling (stratosphere/mesosphere) to understand predictability (hours to decades). Further research: stratospheric aerosols' interaction with radiation, assessing Navy mission importance. Supports satellite measurements (temperature, aerosols, constituents) for process studies/model comparison. ***FY 2027 Base Plans:*** - Continue research into Atmospheric Processes. The objective of this effort is to improve our understanding of complex atmospheric processes involving multiple scales in time and space and explore new, innovative strategies for observing, representing, and predicting the atmosphere. Efforts in this area encompass processes in the atmosphere, processes in coupled environmental systems (e.g. land/wave/ocean/ice/atmosphere), aerosol processes, and processes related to accurately estimating forecast uncertainty. Furthermore; this thrust encompasses projects aimed at effectively utilizing novel computational platforms or techniques to enable improved understanding or heretofore unobtainable accuracy of atmospheric forecasts. - Continue research into Environmental Sensing. The overall objective is to increase our understanding in the areas necessary to obtain remote sensing measurement capabilities for battlespace environment constituents and phenomena that are important for environmental situational awareness and for driving battlespace environment models, but heretofore have either not been measured by remote sensing or have not been measured to the required accuracy. This entails research in several areas, including: improved understanding of the specific phenomenology to be probed by remote sensing or that impacts what is being remotely sensed, the creation of new sensors, and the generation of models to map from what is observed to what is required by a human or model. Efforts in this area will improve the understanding of physical processes and remotely sensed signatures of oceanographic, atmospheric, littoral, and inland domains to include - but not limited to - bare soil and vegetation-covered terrain, ocean wave and current dynamics, bio-optical characterization, and the air-sea interface. It will also explore improved understanding of environmentally impacted sensing related to tactical sensors and surveillance systems. - Continue efforts into the improvement of the basic understanding of physical and biological oceanographic processes on space and time scales of Naval interest in Oceanographic Process. Emphasis is on improved measurement and numerical based prediction. The following are some of the objectives in this research area. First is to quantify and understand important oceanographic processes that lead to the development of ocean					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
dynamic models from global to submesoscale scales, and to develop methods for evaluating and validating the accuracy of models at these various scales. - Continue research into Geosciences Processes to understand the processes that generate and modify the shape, structure, biogeochemical, physical, and mechanical properties of the fluid-sediment bottom boundary layer through all areas of Naval relevance from deep water to on the beach. Research efforts in this area address an understanding of predictive model approaches both in representing the physics of seabed material and representing the influences of uncertainty in the seabed physical properties. - Continue research into Data Assimilation Process to exploit environmental sensing data to make optimal estimates to enable numerical model predictions, estimate individual environmental parameters, and provide the rigorous uncertain in these. These efforts will enable environmental sensing to be transformed into forecasts for Navy application. Areas of investigation include characterizing errors in observations and in models, the exploration of novel data assimilation techniques for the battlespace environment, the incorporation of novel means of sensing, and the theory required to make battlespace environment data assimilation computationally tractable. This area covers the seabed, littoral, ocean, waves, ice, land surface, atmosphere, and middle atmosphere, and interactions in coupled systems. - Continue research efforts into Middle Atmosphere Processes to support measurements and modeling in the middle atmosphere (stratosphere and mesosphere) with the goal of understanding predictability on scales from hours to multi-decadal. Further areas of research in stratospheric aerosols to understand its interaction with radiation and assess its importance for Navy missions shall be conducted. The final area covered in this area supports satellite measurements in this region, including temperature, aerosols, and chemical constituents for use in process studies and comparison with models. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding increase from FY 2026 to FY 2027 is due to increased research in atmospheric processes, environmental sensing, and data assimilation.					
Title: Space Research	17.919	22.800	0.000	0.000	0.000
FY 2026 Plans: - Complete research investigations into the geospace, which extends from the mesosphere up to the thermosphere. This is the environment in which the ionosphere is embedded and in which many low-Earth orbit satellites are located. Thus, the Extended Operational (Geospace) Environment research aims at developing a fundamental understanding of the relevant physical, chemical and dynamic processes in this altitude regime, and the development of innovative approaches to sense and monitor the relevant environment, as well as the impacts of the solar and lower atmospheric drivers and their respective impacts. Real time knowledge and the ability to forecast this environment are highly relevant to DON capabilities, such as over the horizon radar and high frequency (HF) communications. - Complete research efforts in High-Energy Space Environments comprising electromagnetic and particle radiation, including x-rays, gamma rays, protons, and electrons. Sensing, understanding the physics of, and interpreting the high energy space environment can be exploited for a multitude of DON-relevant applications, including, but not limited to positioning, navigation and timing (PNT), C2ISR, and space domain awareness. The goals of this research include the fundamental understanding of the high-energy space environment, ranging from the physical processes that emit the radiation, to the measurement of the natural and man-made environment with innovative, more efficient instrumentation, to novel approaches for the extraction of information from the observations. - Complete research in Radio and Infrared Astronomy regarding Naval-relevant applications, ranging from ionospheric specification, to positioning, navigation and timing (PNT), to space domain awareness. Research efforts include the development of exquisite imaging capabilities in the radio and visible/near-infrared at unprecedented angular resolution and to conceive and advance astrophysics techniques for future transition to a variety of DON and national security applications. - Complete research regarding the interplanetary space of our solar system that is under the direct influence of the Sun via physical phenomena such as the solar wind and electromagnetic radiation spanning nearly the entire spectrum summarized as Heliospace Environment research. The long-term goal of this research is to specify,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and, with observational data, forecast heliospace dynamics and the impact of the Sun's variability on the Earth, and develop predictive and real-time DON-capability-relevant threat warnings. - Complete research on the coupled processes in the high atmosphere, between the troposphere and stratosphere and the stratosphere/mesosphere and ionosphere and their effect on weather and space weather prediction. - Complete research on atmospheric or Earth system coupled processes that are not well understood, including cloud and aerosol interaction, marine boundary layer and coastal prediction, and diurnal and mesoscale variability to improve their representation in forecast models. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY2026 to FY2027 is due to completion of atmospheric, space environment, and solar system research areas.					
Title: Physical Oceanography and Prediction	4.734	4.220	6.639	0.000	6.639
FY 2026 Plans: - Continue research efforts in physical oceanography, acoustics and prediction to understand the exploitation of structural/physical acoustic processes. Research efforts explore factors in the assessment and reduction of the threat posed by enemy submarines and mines, the determination of methods to reduce the vulnerability of U.S. submarines, the development of next generation sonar and sensor systems, and in the development of new micro-structure and nano-structure devices. The objective is to develop new and improved techniques for understanding, detecting, visualizing, exploiting, predicting, and controlling the interactions between acoustic and elastic waves, and structures. These research efforts are essential to structural acoustic-based hull designs, which are naturally compatible with high-density, hull-mounted sensor systems for sonar arrays, performance monitors, active control, and stealth. - Continue research efforts involving laboratory, field, and theoretical/numerical studies to investigate physical phenomena related to acoustic propagation and scattering in oceanic environments such as: prediction of the					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
scattering signature of a structure using noise sources of opportunity; fundamental physical phenomena of wave propagation in ocean environments; approaches to separate an acoustical field from turbulent flow on an acoustic array; new structural acoustics theory for scattering from large, complex undersea objects; and creation of new approaches to monitoring the acoustic signature and structural state of undersea vessels. - Initiate research into phenomena associated with electro-optics and magnetics sensing in ocean environments. These includes magnetic anomaly detectors (MADs), infrared (IR) detectors, passive optics, and laser detection and ranging (LIDAR). Non-acoustic submarine detection technologies are those that do not rely on the collection of soundwaves emitted or reflected by a submerged vehicle for detection of localization ***FY 2027 Base Plans:*** - Continue research efforts in physical oceanography, acoustics and prediction to understand the exploitation of structural/physical acoustic processes. Research efforts explore factors in the assessment and reduction of the threat posed by enemy submarines and mines, the determination of methods to reduce the vulnerability of U.S. submarines, the development of next generation sonar and sensor systems, and in the development of new micro-structure and nano-structure devices. The objective is to develop new and improved techniques for understanding, detecting, visualizing, exploiting, predicting, and controlling the interactions between acoustic and elastic waves, and structures. These research efforts are essential to structural acoustic-based hull designs, which are naturally compatible with high-density, hull-mounted sensor systems for sonar arrays, performance monitors, active control, and stealth. - Continue research efforts involving laboratory, field, and theoretical/numerical studies to investigate physical phenomena related to acoustic propagation and scattering in oceanic environments such as: prediction of the scattering signature of a structure using noise sources of opportunity; fundamental physical phenomena of wave propagation in ocean environments; approaches to separate an acoustical field from turbulent flow on an acoustic array; new structural acoustics theory for scattering from large, complex undersea objects; and creation of new approaches to monitoring the acoustic signature and structural state of undersea vessels. - Continue research into phenomena associated with electro-optics and magnetics sensing in ocean environments. These includes magnetic anomaly detectors (MADs), infrared (IR) detectors, passive optics, and laser detection and ranging (LIDAR). Non-acoustic submarine detection technologies are those that do not rely on the collection of soundwaves emitted or reflected by a submerged vehicle for detection of localization ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in physical oceanography and electro-optics and magnetics sensing in ocean environment.					
Title: Ocean Acoustics	2.468	3.466	1.994	0.000	1.994
FY 2026 Plans: - Continue research efforts in Ocean Acoustics to investigate physical phenomenon related to in oceanic environments. This program is focused on extending acoustic propagation simulation technology as a fundamental tool for understanding the environment through inversion methods and performance prediction. Efforts in this area of research are investigating acoustic propagation and interactions with the sea surface and seabed to improve system prediction performance, sonar processing, and to discover novel concepts for Anti-submarine Warfare (ASW). Research will include the ability to remotely determine the complete elastic properties of the ocean's sediment will address serious shortcomings in Navy databases that affect many acoustic performance prediction models as well as mine warfare planning assessments. Another specific area of research will be developing the understanding and being able to model the acoustic field in a three-dimensional environment - which will greatly increase the ability to detect and track submerged targets in environments with significant changes in environmental characteristics. An important goal in ASW is passive source localization in littoral regions. ***FY 2027 Base Plans:*** - Continue research efforts in Ocean Acoustics to investigate physical phenomenon related to in oceanic environments. This program is focused on extending acoustic propagation simulation technology as a fundamental tool for understanding the environment through inversion methods and performance prediction. Efforts in this area of research are investigating acoustic propagation and interactions with the sea surface and seabed to improve system prediction performance, sonar processing, and to discover novel concepts for Anti-submarine Warfare (ASW). Research will include the ability to remotely determine the complete elastic properties of the ocean's sediment will address serious shortcomings in Navy databases that affect many acoustic performance prediction models as well as mine warfare planning assessments. Another specific area of research will be developing the understanding and being able to model the acoustic field in a three-dimensional environment - which will greatly increase the ability to detect and track submerged targets in environments with					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
significant changes in environmental characteristics. An important goal in ASW is passive source localization in littoral regions. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research in ocean acoustics to investigate physical phenomenon related to in oceanic environments for ASW systems.					
Title: Research Facilities ***Description:*** Various oceanographic and meteorological research facility support: Primary effort is support to the U.S. Academic Research Fleet (ARF) currently consists of 17 oceanographic vessels and various submersibles/autonomous vehicles owned by the National Science Foundation, the Office of Naval Research (ONR), and U.S. universities and laboratories. Secondary support to other research facility. The six Navy owned Oceanographic Research Vessels AGOR 23-28 and DSV2 ALVIN are a subset of the 17 vessels of the ARF. Navy owned AGOR are leased to academic institutions within the University-National Oceanographic Laboratory System (UNOLS) operators under the authority of 10 USC 2667. Navy AGORs are retained as government property with Office of Naval Research responsible for life-cycle stewardship, including divestment costs, new acquisitions, emergent repairs, and system upgrades to the AGOR Fleet. AGOR material condition is assessment by the Navy under the authority of 10 USC Section 8674, US Coast Guard, and American Bureau of Shipping. All ARF ships and vehicles are operated by research universities and laboratories. The ARF is a subset of the U.S. Federal Oceanographic Fleet, collaborating under the auspices of the Federal Interagency Working Group on Facilities and Infrastructure. Access to the ARF vessels and vehicles is accomplished through collaboration with UNOLS. Universities and laboratories that operate ARF vessels are designated as UNOLS operators, and as such, adhere to the UNOLS Research Vessel Safety Standards, as well as applicable U.S. Coast Guard Code of Federal and International Maritime regulations. All ARF ships are U.S.-flagged vessels, with those over 300 tons operating under a Certificate of Inspection and tracked by the U.S. Department of Transportation Maritime Administration.	0.000	0.000	20.080	0.000	20.080

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1398 / *Ocean Atmosphere and Space Sciences*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
ARF ships also work collaboratively with international research vessels efforts including barter agreements with European Research Vessel operators. Other domestic, federal, and international Oceanographic Research Vessels are support including use of USCG Icebreakers, NATO Oceanographic Research Vessels, and meteorological research aircraft such as the Navy Post Graduate School Twin Otter. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Provide support to meteorological, limnology, and oceanographic research vessels, aircraft, manned and unmanned platforms and associated services (Such as winches, instrumentation, portable ship-borne scientific laboratory vans and data storage) especially those provided by the ARF to enable at-sea oceanographic science. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY2026 to FY2027 is due to breaking out support of oceanographic research vessels, aircrafts, manned and unmanned platforms, and associated services for transparency.					
Accomplishments/Planned Programs Subtotals	117.746	127.483	114.939	0.000	114.939

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not Required

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1400 / *Power and Energy*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1400: *Power and Energy*	0.000	26.098	19.903	18.833	-	18.833	18.674	19.682	20.006	20.011	Continuing	Continuing

Note

All Expeditionary Investments in Project 1400 Power and Energy have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The vision of the Power and Energy Focus Area is "Naval Missions unconstrained by power and energy. The Power and Energy Focus Area enable increasingly efficient, reliable, resilient and abundant energy for Navy and Marine Corps infrastructure, platforms, systems and equipment. This focus area develops energy/power/thermal technologies required to deliver advanced naval capabilities and the ability to sustain/operate in contested logistics environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Aerospace Propulsion, Power and Thermal Management ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.662	0.000	0.000	0.000	0.000
Title: Power, Energy and Propulsion ***Description:*** The P&E Focus Area consists of the following research areas: Energy Storage: Advancing new approaches to traditional battery and capacitor systems including pursuit of advanced chemistries, analysis techniques, safety and containment, battery management systems, thermal management, and domestic manufacturing and sourcing. The research area also addresses alternative fuels and non-electrochemical means for storing energy. Power Generation: Interests in energy conversion, from fuel-to-electric (i.e. fuel cells), fuel-to-mechanical (i.e. engines), energy harvesting (i.e. photovoltaics), thermal-to-electric and energy transduction in general. The	11.835	9.933	11.818	0.000	11.818

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1400 / *Power and Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
research area also addresses air-independent power, combustion and machinery topics - bearings, gearing, generators and motor technology. Thermal Management: Encompasses control of two-phase flow in complex geometries, flow instability, evaporative cooling, new materials and architectures for thermal energy storage, novel additively manufactured heat exchangers, tunable thermal materials - diodes/switches, alternative refrigerants, high thermal conductivity materials, alternative cooling cycles, physics-based and systems level dynamic modeling, and employment of machine learning approaches for modeling phase change heat transfer. Distribution, Control and Resilience: Advancement of power electronics, real-time hardware-in-the-loop modeling of power architectures, digital twin development, adaptation of AI in pursuit of power system resilience, and advanced electrical conductor research. ***FY 2026 Plans:*** - Complete both exploratory and confirmatory research with future naval application in Thermal Management and Power Distribution, Control & Resilience research areas. - Continue fundamental electrical power, energy and propulsion research. - Continue research in heat transfer and thermal management science and materials to enable effective cooling of future directed energy systems, power electronics, personnel, etc. - Continue power generation research to improve operational endurance, energy storage, distribution, power management and control. - Continue power electronics research for improved energy conversion efficiency, and electromagnetic materials research to achieve compatibility with high frequency power electronics. - Continue to advance material science for electrochemical energy storage, alternative fuels, fuel cells, dielectrics, and photovoltaics. - Continue physics-based modeling efforts, and the development of digital twins for power and energy materials, components, and systems. ***FY 2027 Base Plans:*** - Complete power electronics research for improved energy conversion efficiency, and electromagnetic materials research to achieve compatibility with high frequency power electronics. - Continue fundamental electrical power, energy and propulsion research. - Continue research in heat transfer and thermal management science and materials to enable effective cooling of future directed energy systems, power electronics, personnel, etc.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1400 / *Power and Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue power generation research to improve operational endurance, energy storage, distribution, power management and control. - Continue to advance material science for electrochemical energy storage, alternative fuels, fuel cells, dielectrics, and photovoltaics. - Continue physics-based modeling efforts, and the development of digital twins for power and energy materials, components, and systems. - Initiate power and energy research under the Naval Undersea Research Program supporting undersea weapons. - Initiate fundamental research in the development of advanced batteries to Expand the Industrial Base for Battery Development. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in power and energy research under the Naval Undersea Research Program supporting undersea weapons and fundamental research in the development of advanced batteries to Expand the Industrial Base for Battery Development.					
Title: Sea Warfare and Weapons STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.345	0.000	0.000	0.000	0.000
Title: Expeditionary Power and Energy ***Description:*** Supports phenomenological studies to enable fundamentally new power and energy advancement for new naval applications in the future operating environment. ***FY 2026 Plans:*** - Complete research to study, characterize, understand, and exploit anionic redox phenomena in lithium-ion and sodium- ion batteries and solve fundamental challenges en route to improving and designing new materials	1.383	1.302	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1400 / *Power and Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
that could increase the cathode capacity of these battery chemistries by exploiting the anionic redox processes. (Expeditionary Warfare) - Complete research into understanding the innate multi-physics of multiferroic materials to enable future new expeditionary applications. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and naval priorities.					
Title: Structural Materials ***FY 2026 Plans:*** - Continue research efforts into Power, Energy, and Propulsion topics to advance Navy / Marine Corps capabilities in power, energy, and propulsion. These research efforts will develop an understanding of new materials for on-demand (electro)chemical energy generation, harvesting, storage, and release. Research efforts will focus on energy storage materials, including energetic materials, reactive metal nanoparticle fuel additives, new - both nanoscale and mesoporous - materials and supercapacitors and safe rechargeable batteries. ***FY 2027 Base Plans:*** - Continue research efforts into Power, Energy, and Propulsion topics to advance Navy / Marine Corps capabilities in power, energy, and propulsion. These research efforts will develop an understanding of new materials for on-demand (electro)chemical energy generation, harvesting, storage, and release. Research efforts will focus on energy storage materials, including energetic materials, reactive metal nanoparticle fuel additives, new - both nanoscale and mesoporous - materials and supercapacitors and safe rechargeable batteries. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***	7.873	8.668	7.015	0.000	7.015

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1400 / *Power and Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding decrease from FY 2026 to FY 2027 is due to decrease in research within Power, Energy, Propulsion, and energy storage.					
Accomplishments/Planned Programs Subtotals	26.098	19.903	18.833	0.000	18.833

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1401 / *Undersea Systems Payloads and Weapons*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1401: *Undersea Systems Payloads and Weapons*	0.000	6.540	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.540

Note

Investments in Project 1401 Undersea Systems Payloads and Weapons are now funded in this same PE 0601153N under Project 1508 Undersea Systems and 1402 STEM, Outreach and Partnerships.

A. Mission Description and Budget Item Justification

This Focus Area (FA) addresses innovative affordable, persistent, and stealthy undersea systems that leverage the asymmetric US Navy advantage afforded by subsurface operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Undersea Weaponry ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.435	0.000	0.000	0.000	0.000
Title: Sea Warfare and Weapons STEM ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.105	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	6.540	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1401 / *Undersea Systems Payloads and Weapons*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1402 / *Naval STEM, Outreach, & Partnerships*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1402: *Naval STEM, Outreach, & Partnerships*	0.000	16.958	56.780	62.423	-	62.423	63.291	66.276	65.738	66.925	Continuing	Continuing

Note

STEM, Outreach, and Partnership support efforts have been consolidated under Project 1402 starting in FY26 to promote greater transparency and execution oversight in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Naval STEM (Science, Technology, Engineering, and Mathematics) research area proactively addresses a variety of naval, and national, security issues by fostering and cultivating a world-class workforce as necessary to maintain the U.S. Navy and Marine Corps technological superiority. The Naval STEM research area supports strategic opportunities that inspire, engage, educate, employ, develop, and retain the current and future workforce through a portfolio of research and initiatives. Naval STEM initiatives are coordinated across the Naval Research Enterprise (NRE) to provide critical skills and career opportunity awareness.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval STEM	16.958	32.599	38.967	0.000	38.967
Description: The Naval Science, Technology, Engineering and Math (STEM) activity addresses the critical need to grow and maintain a highly skilled technical naval workforce. These efforts inspire, engage, educate and attract participants to pursue naval careers and build the extramural performer base. DON STEM education and outreach is designed to increase the number of students and naval civilians with naval-relevant skills and degrees, expand capabilities of the current and future workforce by developing curricula and augmenting education, and augment awareness of Naval opportunities through localized education and outreach initiatives that foster the talent pipeline.					
FY 2026 Plans: Science, Technology, Engineering and Mathematics (STEM) - Continue existing successful efforts, like the Navy and Marine Corps Junior Reserve Officers' Training Corps (JROTC) Flight Academy, while examining approaches to further scale up these efforts to achieve greater impact across the DON. - Continue the development of highly scalable efforts, like Naval Horizons, to expand STEM education and outreach through the development of new virtual and in-person curricula and experiential learning activities. - Continue activities targeting national and regional efforts to augment awareness of naval opportunities and increase workforce opportunity for the naval science and technology community.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to cultivate a world-class STEM workforce relevant to the needs of Department of Navy's current and future workforce through a competitive grants process open to academia, industry, and non-profits. - Continue efforts to expand STEM education through train-the-trainer efforts, like the workshops and residential programs offered by US Naval Academy. - Continue STEM efforts to address Naval skilled technical workforce needs (e.g., skilled workforce to support Navy shipyards). - Initiate efforts to geographically expand STEM outreach outside of fleet concentration areas. Ocean, Atmosphere, and Space STEM Initiatives: - Continue STEM activities to augment awareness of naval opportunities and increase workforce opportunities for prospective scientists and engineers in the fields of ocean, atmosphere, and space sciences. - Continue hands-on autonomous undersea vehicle competitions to introduce and train prospective scientists and engineers to undersea vehicle design, construction, and operation. - Continue research efforts in support of the Ocean Acoustics National Naval Responsibility to support the development of the U.S. ocean acoustics workforce pipeline. - Continue research efforts in support of the Tactical Oceanography National Naval Responsibility to support the development of the U.S. ocean acoustics workforce pipeline. Sea Warfare and Weapons STEM Initiatives: - Continue activities targeting efforts to increase awareness and participation in Navy research and workforce opportunities for prospective scientists and engineers in fields related to Naval sea warfare and weapons. - Continue STEM efforts to address Naval skilled technical workforce needs to support Navy sea warfare and weapons systems. - Continue to fund efforts focused on raising awareness of the Sea Warfare and Weapons Focus Areas through competitions for students, as well as funding student veterans at various universities to work on projects at Navy laboratories. Warfighter Performance STEM Initiatives: - Terminated in FY 2025: Complete SEAL to Seal workshops, youth diving programs, and drone building competitions to promote community outreach, captivating K-12 students and encouraging them to pursue future naval careers in warfighter performance (e.g. marine mammal health, undersea medicine, unmanned systems, and artificial intelligence).					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Terminated in FY 2025: Complete the analysis of early interventional approaches to expand and optimize STEM education and outreach implementation in classrooms, with a focus on reaching students in a variety of human and biological STEM fields. - Complete STEM efforts to address Naval skilled technical workforce pipeline needs through increased opportunities for school students in areas such as cybersecurity, bio-metric devices and data science centered skill-building programs, university level aviation human factors academic minors, and online diving video docuseries. - Initiate STEM programs to encourage, train, and/or educate individuals to pursue Naval careers in high-priority warfighter performance domains (e.g., biotechnology, bioengineering and robotics, human factors and systems integration, decision superiority, artificial intelligence, and modelling and simulation). Naval Air Warfare and Weapons STEM Initiatives: - Initiate STEM efforts to develop a workforce in naval careers in electronic warfare, sensors and surveillance, cybersecurity, network and communications, data science and optimization.					
FY 2027 Base Plans: Science, Technology, Education and Mathematics (STEM) - Continue existing successful efforts, like the Navy and Marine Corps Junior Reserve Officers' Training Corps (JROTC) Flight Academy, while examining approaches to further scale up these efforts to achieve greater impact across the DON. - Continue the development of highly scalable efforts, like Naval Horizons, to expand STEM education and outreach through the development of new virtual and in-person curricula and experiential learning activities. - Continue activities targeting national and regional efforts to augment awareness of naval opportunities and increase workforce opportunity for the naval science and technology community. - Continue to cultivate a world-class STEM workforce relevant to the needs of Department of Navy's current and future workforce through a competitive grants process open to academia, industry, and non-profits. - Continue efforts to expand STEM education through train-the-trainer efforts, like the workshops and residential programs offered by US Naval Academy. - Continue STEM efforts to address Naval skilled technical workforce needs (e.g., skilled workforce to support Navy shipyards). - Continue efforts to geographically expand STEM outreach outside of fleet concentration areas. Ocean, Atmosphere, and Space STEM Initiatives:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue STEM activities to augment awareness of naval opportunities and increase workforce opportunities for prospective scientists and engineers in the fields of ocean, atmosphere, and space sciences. - Continue hands-on autonomous undersea vehicle competitions to introduce and train prospective scientists and engineers to undersea vehicle design, construction, and operation. - Continue research efforts in support of the Ocean Acoustics National Naval Responsibility to support the development of the U.S. ocean acoustics workforce pipeline. - Continue research efforts in support of the Tactical Oceanography National Naval Responsibility to support the development of the U.S. ocean acoustics workforce pipeline. Sea Warfare and Weapons STEM Initiatives: - Continue activities targeting efforts to increase awareness and participation in Navy research and workforce opportunities for prospective scientists and engineers in fields related to Naval sea warfare and weapons. - Continue STEM efforts to address Naval skilled technical workforce needs to support Navy sea warfare and weapons systems. - Continue to fund efforts focused on raising awareness of the Sea Warfare and Weapons Focus Areas through competitions for students, as well as funding student veterans at various universities to work on projects at Navy laboratories. Warfighter Performance STEM Initiatives: - Continue STEM programs to encourage, train, and/or educate individuals to pursue Naval careers in high-priority warfighter performance domains (e.g., biotechnology, bioengineering and robotics, human factors and systems integration, decision superiority, artificial intelligence, and modelling and simulation). Naval Air Warfare and Weapons STEM Initiatives: - Continue STEM efforts to develop workforce in naval careers in electronic warfare, sensors and surveillance, cybersecurity, network and communications, data science and optimization. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 reflects increased investments in STEM research and initiatives to expand education and outreach, increase awareness of Naval workforce opportunities, and increase efforts to					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
address Naval skilled technical workforce needs in the areas of C5ISRT; Ocean, Atmosphere, and Space; Sea Warfare and Weapons; Warfighter Performance; and Naval Air Warfare and Weapons.					
Title: Historically Black Colleges and Universities / Minority Institutions (HBCU/MI)	0.000	8.915	9.216	0.000	9.216
Description: The Department of the Navy's (DON) Historically Black Colleges and Universities/Minority Institutions (HBCU/MI) program oversees the Navy's efforts to engage and support research in our nation's HBCU/MIs and is responsible for developing and managing efforts that strengthen and support the capabilities of HBCU/MIs to participate in basic, applied, and advanced development research programs within the Naval Research Enterprise. ***FY 2026 Plans:*** - Complete new outreach initiatives to increase number of HBCU/MI white paper and grant proposal submissions - to include making more grant awards. - Complete effort to increase number of science fairs at HBCU/MIs that have partnerships with local junior and high schools to include providing more Chief of Naval Research scholarships. - Complete effort to increase number of SYSCOMs participating in Scholarship for Service (S4S) at the Naval Postgraduate School. - Continue with increasing number of internships at SYSCOMs: NRL, NAVSUP, NAVAIR, NAVFAC, BUMED, NAVWAR, Marine Corps, and SSP for students at HBCU/MIs. - Continue to provide faculty fellowships for HBCU/MI faculty to conduct naval-relevant research at all Naval Warfare Centers and Laboratories. - Continue to expand the DoN HBCU/MI Post-doctoral program that impacts the number of HBCU/MI PhD candidates working within the Navy STEM related fields. - Initiate new outreach initiatives in accordance with congressional directives and executive order to increase the capacity and facilities for HBCUs to develop pipeline for technologies and transitions to the Fleet. - Initiate the pipeline into STEM enrichments through scholarship awards to include the Chief of Naval Research scholarships. ***FY 2027 Base Plans:*** - Continue with increasing number of internships at SYSCOMs: NRL, NAVSUP, NAVAIR, NAVFAC, BUMED, NAVWAR, Marine Corps, and SSP for students at HBCU/MIs. - Continue to provide faculty fellowships for HBCU/MI faculty to conduct Naval-relevant research at all Naval Warfare Centers and Laboratories.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue new outreach initiatives in accordance with congressional directives and executive order to increase the capacity and facilities for HBCUs to develop pipeline for technologies and transitions to the Fleet. - Continue the pipeline into STEM enrichments through scholarship awards to include the Chief of Naval Research scholarships. - Continue to expand the DoN HBCU/MI Post-doctoral program that impacts the number of HBCU/MI PhD candidates working within the Navy STEM related fields. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY2026 to FY2027 is due to increased number of internships at SYSCOMS for students at HBCU/MIs.					
Title: Naval Research Enterprise Internship Program and The Science and Engineering Apprenticeship Program (NREIP/SEAP) ***Description:*** This program supports both the Naval Research Enterprise Intern Program (NREIP) for college students and the Science and Engineering Apprenticeship Program (SEAP) for high school students to encourage participants to pursue science and engineering careers. The objective is to further education via mentoring by laboratory personnel and their participation in research, and to make them aware of Department of the Navy (DON) research and technology efforts. This program serves as a recruitment tool for employment within the DON or industry or academic organizations supporting DON. Participating students at 45 DON laboratories will spend eight to ten weeks during the summer conducting research. ***FY 2026 Plans:*** - Continue Naval Research Enterprise Internship Program (NREIP) and Science and Engineering Apprenticeship Program (SEAP) opportunities for students to participate in Navy and Marine Corps-relevant research at Naval Warfare Centers and Laboratories by expanding the number of participating sites, mentors, and interns. ***FY 2027 Base Plans:*** - Continue Naval Research Enterprise Internship Program (NREIP) and Science and Engineering Apprenticeship Program (SEAP) opportunities for students to participate in Navy and Marine Corps-relevant research at Naval Warfare Centers and Laboratories by expanding the number of participating sites, mentors, and interns. ***FY 2027 OOC Plans:***	0.000	2.626	2.773	0.000	2.773

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** No significant changes.					
Title: Young Investigator Program (YIP) ***Description:*** The Young Investigator Program (YIP) seeks to identify and support academic scientists and engineers who are early in their careers and show exceptional promise for performing creative research. The objectives of this program are to attract outstanding faculty members of U.S. Institutions of Higher Education to the Department of the Navy's Science and Technology research program, to support their research, and to encourage their teaching and research careers. ***FY 2026 Plans:*** - Complete Young Investigator Program topics initiated in previous fiscal years and review opportunities to transition technologies and identify future funding for high-quality investigators. - Continue FY2024 and FY2025 YIP awards to assistant professors that have demonstrated exceptional promise for performing creative research. The research will benefit today's and the next generation warfighter by improving lethality, survivability, and communications. Additionally, many of the investigators will provide long-term support and knowledge in solving Naval related S&T challenges. - Initiate Young Investigator Program topics selected in fiscal year 2026 where each awardee will provide innovative solutions to naval warfare challenges and establish a pipeline for future scientists and engineers in support of warfighter superiority. ***FY 2027 Base Plans:*** - Complete Young Investigator Program topics initiated in previous fiscal years and review opportunities to transition technologies and identify future funding for high-quality investigators that will contribute to developing capabilities for the Navy. - Continue FY2025 and FY2026 YIP awards to assistant professors that have demonstrated exceptional promise for performing innovative research. The research will benefit the Sailor by improving lethality, survivability, and communications. Additionally, many of the investigators will provide long-term support and knowledge in solving Naval-related challenges.	0.000	12.640	11.467	0.000	11.467

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1402 / *Naval STEM, Outreach, & Partnerships*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate Young Investigator Program awards selected in fiscal year 2027 that will provide innovative solutions to naval warfare challenges and establish a pipeline for future scientists and engineers in support of warfighter superiority. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to completion of Young Investigator Topics started in prior fiscal years.					
Accomplishments/Planned Programs Subtotals	16.958	56.780	62.423	0.000	62.423

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1501 / *Autonomy/AI*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1501: *Autonomy/AI*	0.000	0.000	2.940	27.696	-	27.696	24.309	26.371	25.894	25.536	Continuing	Continuing

Note

Investments in Project 1501 Autonomy/AI were previously funded in this same PE 0601153N under Project 1392 Human Systems, 1507 Naval Aerospace, and Project 5893 Decision Superiority. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1501 Autonomy/AI have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Autonomy/ AI Project conducts foundational research in: machine learning, reasoning and intelligence; automated image, scene, and signal understanding; large-scale distributed decision making; transferring learning and sharing knowledge across domains; creating trusted and explainable artificial intelligence; and human-AI collaboration techniques. Results of this research will lead to trusted, advanced AI techniques that will solve more complex tasks and enhance autonomy for DON systems and missions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Decision Superiority	0.000	0.974	0.000	0.000	0.000
Description: Supports the fundamental basic research and phenomenological studies into perceiving the future operational environment, processing information, and supporting decision-making to gain a future competitive advantage across the range of naval expeditionary missions. ***FY 2026 Plans:*** - Complete a focused research effort for discovery research on multi-class, multi-objective deep reinforced learning algorithms with automated training. (Expeditionary Warfare) - Complete research into deception, degradation, and manipulation of artificial intelligence algorithms in perception/action loops. (Expeditionary Warfare) - Complete research on understanding generalized theoretical foundations and limitations of predicting, deceiving, and disrupting artificial intelligence algorithms embedded in the perception/action loops of autonomous systems. (Expeditionary Warfare) - Complete effort to lay the theoretical and methodological foundations for detecting threats using social media data. (Expeditionary Warfare)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete research to understand the influence of mis/dis/mal information in social media. (Expeditionary Warfare) - Complete effort to understand how hate and a potential for violence or protest present themselves at a community level. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and naval priorities.					
Title: Science of Artificial Intelligence ***Description:*** Artificial Intelligence (AI) is a necessary component for a multi-domain, battle-capable Fleet. The Naval operational environment is considerably more complex and unstructured than that experienced in the commercial sector, with unique constraints. The Science of AI planned program focuses on basic research that will create efficient computational methods for building versatile intelligent agents (physical and cyber) that can perform a variety of tasks in uncertain, unstructured and open-world environments and aid in command decision making. Research areas include human-inspired computational models of vision-language interactions for agents, mission-focused AI, and collaborative AI. ***FY 2026 Plans:*** - Continue research exploring integration of domain knowledge and physical models with machine learning for fast, robust learning of diverse complex concepts and tasks without the need for labeled data. - Continue research efforts regarding the use of artificial intelligence to advance the scientific understanding of AI-machine collaborative decision-making typical of naval command decision making. - Continue research of formal verification and validation methods for artificial intelligence in the naval domain to enhance trust. - Continue research investigations exploring explainable and verifiable artificial intelligence to enhance human-machine collaboration.	0.000	1.966	13.427	0.000	13.427

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research exploring new brain-inspired artificial intelligence algorithms and architecture to provide rich computational capabilities, with an emphasis on analog/digital hybrid systems, local core memory and multimodal sensing. - Continue research investigations of hardware designs based on brain models that are suitable for low power opto-electronic computation and signal processing in small naval platforms. - Continue research efforts regarding autonomous problem solving and curiosity-driven search for solutions to enable robust performance under unexpected conditions. - Continue research efforts exploring composable computational models of vision-language interactions for intelligent agents that can learn and reason about the real world with high levels of complexity. - Continue research efforts into the use of Artificial Intelligence (incorporating, but not limited to Intelligent Agents, Cognitive Science, Robotics, Autonomy, Machine Learning (ML), and Multi-agent control planes/ protocols) to explore the viability of future distributed autonomous unmanned systems and swarms. These research efforts will include present and future theoretical endeavors in the Cognitive S&T for the deployment of autonomous/interactive intelligent agents compatible with Allies and mission partners. This research area will address foundational theory in computational cognitive modeling for warfighter collaboration, S&T supporting deployment of adaptive autonomy, instructible autonomous systems, resilient agent-control to maintain desired states for deployed distributed autonomous unmanned swarms - including counter/disrupt/combat enemy swarms, and integrated, multi-agent (heterogeneous, human in the loop) autonomous systems. - Continue efforts into High Assurance Computing aimed at the theoretical underpinnings of assurance of deep neural networks, autonomous software-defined networking (SDN) orchestration, automation for reverse engineering and vulnerability analysis, Game-theoretic AI for defenses against cyber-attacks, adversarial threat modeling, privacy-enhancing technologies, covert and encrypted communications, field-programmable gate array (FPGA) based hardware assurance, automatic generation of Correct-by-Construction code. This endeavor also includes ground breaking basic S&T in intelligent agents for autonomic cyber maneuver, scaling and automation of algorithms for vulnerability discovery, mitigation, and weaponization, techniques for rapid verification of customized and/or reprogrammed versions of software/hardware as well as scalable cryptographic computing, cyber-ISR capabilities for an increasingly balkanized Internet, minimalism and composability in systems engineering and design, and integrated cyber-physical vulnerability analysis. - Continue both exploratory and confirmatory research with future naval application in Artificial Intelligence research area (realigned from project unit 1099).					
FY 2027 Base Plans: - Continue research exploring integration of domain knowledge and physical models with machine learning for fast, robust learning of diverse complex concepts and tasks without the need for labeled data.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts regarding the use of artificial intelligence to advance the scientific understanding of AI-machine collaborative decision-making typical of Naval command decision making. - Continue research of formal verification and validation methods for artificial intelligence in the Naval domain to enhance trust. - Continue research investigations exploring explainable and verifiable artificial intelligence to enhance human-machine collaboration. - Continue research exploring new brain-inspired artificial intelligence algorithms and architecture to provide rich computational capabilities, with an emphasis on analog/digital hybrid systems, local core memory and multimodal sensing. - Continue research investigations of hardware designs based on brain models that are suitable for low power opto-electronic computation and signal processing in small Naval platforms. - Continue research efforts regarding autonomous problem solving and curiosity-driven search for solutions to enable robust performance under unexpected conditions. - Continue research efforts exploring composable computational models of vision-language interactions for intelligent agents that can learn and reason about the real world with high levels of complexity. - Continue both exploratory and confirmatory research with future naval application in Artificial Intelligence research area. - Continue research efforts into the use of Artificial Intelligence (incorporating, but not limited to Intelligent Agents, Cognitive Science, Robotics, Autonomy, Machine Learning (ML), and Multi-agent control planes/ protocols) to explore the viability of future distributed autonomous unmanned systems and swarms. These research efforts will include present and future theoretical endeavors in the Cognitive S&T for the deployment of autonomous/interactive intelligent agents compatible with Allies and mission partners. This research area will address foundational theory in computational cognitive modeling for warfighter collaboration, S&T supporting deployment of adaptive autonomy, instructible autonomous systems, resilient agent-control to maintain desired states for deployed distributed autonomous unmanned swarms - including counter/disrupt/combat enemy swarms, and integrated, multi-agent (heterogeneous, human in the loop) autonomous systems. - Continue efforts into High Assurance Computing aimed at the theoretical underpinnings of assurance of deep neural networks, autonomous software-defined networking (SDN) orchestration, automation for reverse engineering and vulnerability analysis, Game-theoretic AI for defenses against cyber-attacks, adversarial threat modeling, privacy-enhancing technologies, covert and encrypted communications, field-programmable gate array (FPGA) based hardware assurance, automatic generation of Correct-by-Construction code. This endeavor also includes ground breaking basic S&T in intelligent agents for autonomic cyber maneuver, scaling and automation of algorithms for vulnerability discovery, mitigation, and weaponization, techniques for rapid verification of customized and/or reprogrammed versions of software/hardware as well as scalable cryptographic					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
computing, cyber-ISR capabilities for an increasingly balkanized Internet, minimalism and composability in systems engineering and design, and integrated cyber-physical vulnerability analysis. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase due to increase of naval research into U.S. Navy AI research that is a critical strategic imperative required to outpace global competitors and secure maritime dominance. This investment will directly enhance warfighting effectiveness by scaling autonomous operations, achieving decision superiority through rapid data analysis, and maximizing fleet readiness with predictive maintenance and logistics. Mastering these AI-driven capabilities is essential for building a more lethal, resilient, and intelligent naval force prepared for future conflicts.					
Title: Intelligent & Collaborative Agents ***Description:*** The primary goal is to develop large-scale, robust, and interpretable methods for reasoning, planning, and decision-making that will enable intelligent, collaborative agents to increase naval mission success rates and warfighter confidence while achieving complex goals in dynamic and uncertain maritime environments. This research emphasizes the development of robust, trusted AI agents and scalable groups of autonomous agents that can operate with minimal human intervention. Objectives focus on advancing integrated vision and control, drastically reducing energy consumption with low size, weight, and power AI for robotic and autonomous systems, and improving the speed and interpretability of AI-driven recommendations. The effort seeks to produce decentralized agents capable of dynamic mission planning, fault handling, and performing complex tasks. This research directly supports the DON by enhancing mission execution for naval autonomous platforms, including enhancing their reliability and reducing the dependence on empirical testing, making them suitable for safety-critical and long-duration missions. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Machine Reasoning and Intelligence: - Continue developing the science base and computational methods for building versatile intelligent agents, which can function autonomously in uncertain, unstructured, uncontrolled, open-world environments, and can collaborate seamlessly with humans and other agents.	0.000	0.000	4.274	0.000	4.274

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue basic research for developing robust computer vision systems, based on human vision, for automated understanding of surveillance imagery, perception for autonomous agents, and managing image/video libraries for after-action analysis and planning. - Continue basic research in machine self-learning for intelligent agents, inspired by human learning, for understanding real-world environments. - Continue basic research in learning and decision-making in multi-agent systems in dynamic, uncertain settings where there are many competitive and cooperative agents and information about intentions and rewards are not fully known. This research area has a wide range of applications in tactical and strategic planning, economic planning, etc. - Continue basic research in exploiting generative models, such as auto-encoders and diffusion models, to solve inverse problems. This research area has a wide range of applications in robot perception and automated understanding of surveillance imagery. - Continue basic research in developing rigorous mathematics, formal methods, and new analytical approaches for evaluating performance of deep generative models and predicting their performance. This research area has the potential for developing analytical tools for verification and validation of generative AI capabilities and for drastically reducing the need for empirical evaluation of such systems such that they can be deployed in safety critical applications. - Complete basic research in developing new mathematical methods for principled design of deep learning architectures and analysis of their behavior. This program is expected to develop techniques for predicting performance of learning-based systems, to improve their generalization abilities, and to reduce the need for empirical verification. -Initiate basic research in control and decision-making in networks of dynamic agents under uncertainties in perception and network models. This is of critical importance for robust and reliable prediction and control of network agents particularly in long-duration missions. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to an internal realignment of resources within PE 0601153N from Project Unit 1502: C5ISR/Naval Space to Project Unit 1501: Autonomy/AI in support of basic research in control and decision-making in networks of dynamic agents under uncertainties in perception and network models.					
Title: Science of Autonomy	0.000	0.000	9.995	0.000	9.995

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** Science of Autonomy and Control of Unmanned Systems Research investigations regarding critical multidisciplinary autonomy challenges that cut across areas/domains, including air, sea, undersea and ground. Research efforts include the following: Continue: - Investigating the scalable and robust distributed collaboration among autonomous systems. - Research on human/unmanned system collaboration. - Work on perception-based adaptation across uncertain naval environments. - Investigating embodied and situated intelligence and architectures. - Developing theory-based tools and methods for safe, assured, robust, verifiable, and trustable autonomy - Both exploratory and confirmatory research with future naval application in the following research areas; Sea-based Aviation, Air Vehicle Sustainment, and Collaborative Autonomy. Initiate: - Developing new general foundational theory and methods for adversarial autonomy in naval domains ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to an internal realignment of resources within PE 0601153N from Proj 1507 (Naval Aerospace) to Proj 1501 (Autonomy/AI) for research area prioritization on developing new general foundational theory and methods for adversarial autonomy in naval domains. Planned programs have been updated to align to current focus area. This is not a new start.					
Accomplishments/Planned Programs Subtotals	0.000	2.940	27.696	0.000	27.696

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1501 / *Autonomy/AI*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1502 / *C5ISR/Naval Space*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1502: *C5ISR/Naval Space*	0.000	0.000	57.921	47.576	-	47.576	53.096	56.236	54.714	53.032	Continuing	Continuing

Note

Investments in Project 1502 C5ISR/Naval Space were previously funded in this same PE 0601153N under Project 1389 Electromagnetic Spectrum, Project 1391 Full Spectrum Cyber, and Project 5893 Decision Superiority. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in C5ISR/Naval Space in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1502 C5ISR/Naval Space have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, Reconnaissance, and Naval Space activity researches and develops technology for the naval force to obtain decisive competitive advantage across the range of naval missions and levels of warfare. This project conducts fundamental research in data science, mathematical optimization, computational and information sciences, command and control (C2), combat systems, communications, cyber security, cyber operations, electromagnetic warfare (EMW), sensing and surveillance, and quantum sciences.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Artificial Intelligence, Data Sciences, and Quantum Information Sciences	0.000	25.095	19.389	0.000	19.389
Description: The AI, Data Sciences, and QIS activity includes basic research efforts directed toward scientific foundations and understanding of novel techniques for controlling quantum states; algorithms for analyzing massive datasets in real time and heterogeneous information integration; science base and computational methods for building versatile intelligent agents; theory, algorithms and tools for decision support; mathematical optimization for resource allocation and usage; and modeling and computation of complex physical phenomena for the unique challenges of the Naval domain.					
FY 2026 Plans: Quantum Information Sciences: - Continue research of quantum states, devices, phenomena relative to the simulation, information processing and computing performance needs of naval systems. - Continue research on novel techniques for controlling quantum states to improve performance of information processors, sensors and clocks.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on demonstrations of systems having a quantum advantage in the solution of optimization problems and quantum simulation of complex physical systems. - Continue research exploring the distribution of entanglement in a quantum network and applications thereof. - Continue research on the use of single magnetic excitations for quantum information processing. - Complete research on the utilization of photonic and phononic devices for high performance quantum information processing. - Initiate research on protocols for efficient quantum error correction. Mathematical Data Science: - Continue basic research in mathematics, probability, statistics, signal processing, machine learning, data engineering, and information theory. - Continue efforts to develop advanced algorithms for analyzing massive datasets in real time, identify real patterns and avoid false positives. - Continue investigations regarding the development of advanced methods to integrate and extract common features from large heterogeneous domains. - Continue research investigations of privacy in complex networks. - Continue research efforts regarding the development of scalable reinforcement learning. - Continue research investigations of causal dependences in complex networks. - Continue research investigation regarding large language models (LLMs). - Initiate research in reliability and trustworthiness of foundation models. - Initiate research on evaluation of LLMs. - Initiate research into training foundation models on small amounts of data. - Initiate research into computationally efficient foundation models. - Initiate research in emergent properties of foundation models. Machine Reasoning and Intelligence: - Continue developing the science base and computational methods for building versatile intelligent agents, which can function autonomously in uncertain, unstructured, uncontrolled, open-world environments, and can collaborate seamlessly with humans and other agents. - Continue basic research in developing new mathematical methods for principled design of deep learning architectures and analysis of their behavior. This program is expected to develop techniques for predicting performance of learning-based systems, to improve their generalization abilities, and to reduce the need for empirical verification.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue basic research for developing robust computer vision systems, based on human vision, for automated understanding of surveillance imagery, perception for autonomous agents, and managing image/video libraries for after-action analysis and planning. - Continue basic research in machine self-learning for intelligent agents, inspired by human learning, for understanding real-world environments. - Continue basic research in learning and decision-making in multi-agent systems in dynamic, uncertain settings where there are many competitive and cooperative agents and information about intentions and rewards are not fully known. This research area has a wide range of applications in tactical and strategic planning, economic planning, etc. - Continue basic research in exploiting generative models, such as auto-encoders and diffusion models, to solve inverse problems. This research area has a wide range of applications in robot perception and automated understanding of surveillance imagery. - Initiate basic research in developing rigorous mathematics, formal methods, and new analytical approaches for evaluating performance of deep generative models and predicting their performance. This research area has the potential for developing analytical tools for verification and validation of generative AI capabilities and for drastically reducing the need for empirical evaluation of such systems such that they can be deployed in safety critical applications. Optimization and Discrete Mathematics: - Continue to identify exploitable mathematical structures within specific decision problems for the purpose of devising superior solution algorithms. - Continue investigations into methods for strategically formulating and solving optimization problems that arise in resource allocation, logistics, and system planning. - Continue investigations into new techniques that utilize convex optimization and duality theory to solve non-convex optimization problems. - Continue research on developing novel first-order methods for solving general classes of problems that include saddle point problems, problems with a large number of constraints, and machine learning problems. - Continue investigations into finding solutions to various forms of multi-agent, multi-round games. - Continue investigations into optimization algorithms that leverage potential future computational advances including quantum and pseudo-quantum computers. - Complete research on integrating machine-learning techniques with algorithms for stochastic and combinatorial optimization. - Complete investigations into applying topological data analysis to combinatorial optimization problems. - Initiate investigations into developing algorithms to solve models on Riemannian manifolds.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate investigations into developing algorithms that find optimal, distributionally robust policies for reinforced learning models. Applied and Computational Mathematics: - Continue basic research in developing analytical and computational tools for models of physical phenomena of critical interest to the Navy in waves, flows, materials, structures and information processing. - Continue to develop robust, reliable and near-real-time computational models for predicting environmental behavior in atmospheric and oceanic processes. - Continue to develop theoretical and computational tools to predict the onset of extreme events, whether in materials, such as formation of shocks, cracks and other discontinuities. - Continue to develop reduced models to enable speed up of computational models in acoustics, electromagnetics and optics, in regimes of special interest to the Navy. - Continue research to develop mathematically rigorous algorithms for employing variable-precision computations in very large-scale multi-physics problems. Naval Research Institution: - Continue to support the Naval Research Institution efforts that provide research experiences, like the Trident Scholar Program, in STEM fields for United States Naval Academy (USNA) midshipmen and faculty members to enhance the midshipmen's educational environment at the USNA. Global engagement in sciences of C5ISR/Naval space: - Continue both exploratory and confirmatory research with future naval application in C5ISR/Naval space research areas (realigned from project unit 1099).					
FY 2027 Base Plans: Quantum Information Sciences: - Continue research of quantum states, devices, phenomena relative to the simulation, information processing and computing performance needs of naval systems. - Continue research on novel techniques for controlling quantum states to improve performance of information processors, sensors and clocks. - Continue research on demonstrations of systems having a quantum advantage in the solution of optimization problems and quantum simulation of complex physical systems. - Continue research exploring the distribution of entanglement in a quantum network and applications thereof. - Continue research on the use of single magnetic excitations for quantum information processing.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on protocols for efficient quantum error correction. - Initiate research on applications of distributed quantum information processing. Mathematical Data Science: - Continue basic research in mathematics, probability, statistics, signal processing, machine learning, data engineering, and information theory. - Continue efforts to develop advanced algorithms for analyzing massive datasets in real time, identify real patterns and avoid false positives. - Continue investigations regarding the development of advanced methods to integrate and extract common features from large heterogeneous domains. - Continue research investigations of privacy in complex networks. - Continue research efforts regarding the development of scalable reinforcement learning. - Continue research investigations of causal dependences in complex networks. - Continue research investigation regarding large language models (LLMs). - Continue research in reliability and trustworthiness of foundation models. - Continue research on evaluation of LLMs. - Continue research into training foundation models on small amounts of data. - Continue research into computationally efficient foundation models. - Continue research into emergent properties of foundation models. - Initiate development of new methods for reinforcement learning from offline datasets. - Initiate development of large language models that are robust to adversarial attacks. Machine Reasoning and Intelligence: - Continue developing the science base and computational methods for building versatile intelligent agents, which can function autonomously in uncertain, unstructured, uncontrolled, open-world environments, and can collaborate seamlessly with humans and other agents. - Continue basic research for developing robust computer vision systems, based on human vision, for automated understanding of surveillance imagery, perception for autonomous agents, and managing image/video libraries for after-action analysis and planning. - Continue basic research in machine self-learning for intelligent agents, inspired by human learning, for understanding real-world environments. - Continue basic research in learning and decision-making in multi-agent systems in dynamic, uncertain settings where there are many competitive and cooperative agents and information about intentions and rewards are					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
not fully known. This research area has a wide range of applications in tactical and strategic planning, economic planning, etc. - Continue basic research in exploiting generative models, such as auto-encoders and diffusion models, to solve inverse problems. This research area has a wide range of applications in robot perception and automated understanding of surveillance imagery. - Continue basic research in developing rigorous mathematics, formal methods, and new analytical approaches for evaluating performance of deep generative models and predicting their performance. This research area has the potential for developing analytical tools for verification and validation of generative AI capabilities and for drastically reducing the need for empirical evaluation of such systems such that they can be deployed in safety critical applications. - Complete basic research in developing new mathematical methods for principled design of deep learning architectures and analysis of their behavior. This program is expected to develop techniques for predicting performance of learning-based systems, to improve their generalization abilities, and to reduce the need for empirical verification. -Initiate basic research in control and decision-making in networks of dynamic agents under uncertainties in perception and network models. This is of critical importance for robust and reliable prediction and control of network agents particularly in long-duration missions. Optimization and Discrete Mathematics: - Continue to identify exploitable mathematical structures within specific decision problems for the purpose of devising superior solution algorithms. - Continue investigations into methods for strategically formulating and solving optimization problems that arise in resource allocation, logistics, and system planning. - Continue investigations into new techniques that utilize convex optimization and duality theory to solve non-convex optimization problems. - Continue research on developing novel first-order methods for solving general classes of problems that include saddle point problems, problems with a large number of constraints, and machine learning problems. - Continue investigations into finding solutions to various forms of multi-agent, multi-round games. - Continue investigations into optimization algorithms that leverage potential future computational advances including quantum and pseudo-quantum computers. - Continue investigations into developing algorithms to solve models on Riemannian manifolds. - Continue investigations into developing algorithms that find optimal, distributionally robust policies for reinforced learning models.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate investigations into models and algorithms for combinatorial problems with uncertainty inspired by unmanned autonomous vehicles. - Initiate investigations into the use of LLMs to interact with optimization models. Applied and Computational Mathematics: - Continue basic research in developing analytical and computational tools for models of physical phenomena of critical interest to the Navy in waves, flows, materials, structures and information processing. - Continue to develop robust, reliable and near-real-time computational models for predicting environmental behavior in atmospheric and oceanic processes. - Continue to develop theoretical and computational tools to predict the onset of extreme events, whether in materials, such as formation of shocks, cracks and other discontinuities. - Continue to develop reduced models to enable speed up of computational models in acoustics, electromagnetics and optics, in regimes of special interest to the Navy. - Continue research to develop mathematically rigorous algorithms for employing variable-precision computations in very large-scale multi-physics problems. -Initiate development of mathematically robust and reliable algorithms for the partial differential equations that govern multiscale and multiphysics phenomena, based on the recent advances in Randomized Numerical Linear Algebra for large matrix and tensor structures. Naval Research Institution: - Continue to support the Naval Research Institution efforts that provide research experiences, like the Trident Scholar Program, in STEM fields for United States Naval Academy (USNA) midshipmen and faculty members to enhance the midshipmen's educational environment at the USNA. Global engagement in sciences of C5ISR/Naval space: - Continue both exploratory and confirmatory research with future naval application in C5ISR/Naval space research areas. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY 2026 to FY 2027 is due to a funding realignment from PE 0601153N / PU 1502: C5ISR/Naval Space to PE 0601153N / PU 1501: Autonomy/AI.					
Title: Communications and Networks	0.000	0.922	7.161	0.000	7.161
Description: The Communications and Networking activity conducts basic research in information-theoretic capacity and wireless communications science to enable seamless, robust connectivity and networking in hostile tactical environments. ***FY 2026 Plans:*** Communications and Networks: Research thrusts in this area include Tactical Communications and Tactical Networks. Tactical Communications: - Continue research efforts to develop new techniques for wireless distributed computing and device-to-device communication. - Continue investigations regarding novel software coding and modulation techniques to improve the efficiency, capacity and/or resilience of wireless communication systems. Tactical Networks: - Continue research efforts regarding Artificial Intelligence/Machine Learning techniques relevant to multi-dimensional Quality-of-Service optimization issues. - Continue research efforts on the development of cognitive methods and algorithms to maintain network resiliency when experiencing communications link disruptions without adding excess overhead resources. - Continue research on learned optimal software-defined network synchronization ***FY 2027 Base Plans:*** Research thrusts in this area include Tactical Communications and Tactical Networks. Tactical Communications: - Continue research regarding novel software coding and modulation techniques to improve the efficiency, capacity and/or resilience of wireless communication systems. - Complete research efforts to develop new techniques for wireless distributed computing and device-to-device communication. - Initiate research zero-power backscatter networks for communications with sensors. Tactical Networks:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts regarding Artificial Intelligence/Machine Learning techniques relevant to multi-dimensional Quality-of-Service optimization issues. - Continue research efforts on the development of cognitive methods and algorithms to maintain network resiliency when experiencing communications link disruptions without adding excess overhead resources. - Continue research on learned optimal software-defined network synchronization. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase due to increased research into robust connectivity and networking in hostile tactical environments.					
Title: Complex Software Systems and Cybersecurity ***Description:*** This activity focuses on developing the fundamental principles and models for the design and construction of complex software and hardware systems that meet required assurances for security, safety, reliability and performance. It builds upon foundations of mathematical logic and computational complexity but takes into account the uncertainties and constraints of the Naval operational environment which is very different from commercial and home cyber environments. The overall goal is to measurably improve the ability of complex computing systems to meet the information-processing challenges of future naval systems. The Cyber Security sub-program investigates wide-ranging principles and techniques for continuously maintaining integrity, availability and confidentiality of information and information infrastructures, focusing on the software, the hardware and the network. The program heavily emphasizes automation and autonomy in the cyber environment, preferring the human-on-the-loop paradigm over the human-in-the-loop, whenever possible. The program seeks to establish an autonomic, secure and dependable informational infrastructure toward ensuring Navy's mission successes. The Complex Software sub-program: Investigates principles, algorithms and methods; explores software and hardware engineering proof-of-concept tools for achieving efficient, timely, robust and secure software executables; focuses on science for software construction, correctness and efficiency by revisiting software development and deployment methodology. Efficient, timely, robust and secure cyber systems are required for secure computing infrastructure toward ensuring Navy's mission successes. ***FY 2026 Plans:*** Complex Software Systems and Cybersecurity: - Continue to investigate and explore novel computing concepts that lead toward robust, resilient, and dependable cyber systems.	0.000	8.414	7.867	0.000	7.867

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on novel methods for attack surface maneuver for cyber physical systems and systems with complex apertures and sophisticated sensing apparatus, to include lightweight decoy synchronization and other resilience techniques. - Continue research on autonomous cyber operations to explore what facets of cyber activities can be done fully autonomously or semi autonomously with human input. - Continue exploration of new alternatives for computing devices and architectures to include chip level security both in design and analysis. - Complete exploration of novel application of ONR's concept of hybrid, formal-statistical machine learning in cyber security and software systems environment. - Complete exploration of physics-based approaches to various security aspect of cyber-physical systems, including authentication, vulnerability testing, and exploit resilience. - Complete critical emphasis on improving scalability and capability of bottom-up formal analysis that would enable users to prove security properties about binaries directly. - Initiate investigation of techniques for microcode-based implementation as a means of achieving hardware-enforced security features such as buffer overwrite preventions.					
FY 2027 Base Plans: Complex Software Systems and Cybersecurity: - Continue to investigate and explore novel computing concepts that lead toward robust, resilient, and dependable cyber systems. - Continue research on novel methods for attack surface maneuver for cyber physical systems and systems with complex apertures and sophisticated sensing apparatus, to include lightweight decoy synchronization and other resilience techniques. - Continue research on autonomous cyber operations to explore what facets of cyber activities can be done fully autonomously or semi autonomously with human input. - Continue exploration of new alternatives for computing devices and architectures to include chip level security both in design and analysis. - Continue investigation of techniques for microcode-based implementation as a means of achieving hardware-enforced security features such as buffer overwrite preventions. - Initiate exploration of possible vulnerabilities in AI applications and training.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding decrease from FY 2026 to FY 2027 is due to reduced research on novel methods for attack surface maneuver for cyber physical systems and systems with complex apertures and sophisticated sensing apparatus, to include lightweight decoy synchronization and other resilience techniques.					
Title: Electromagnetic Warfare ***FY 2026 Plans:*** - Continue investigations into novel approaches to deep-generative machine learning-based algorithms and architectures for multi-static radar imaging to enable better noise robustness and resolution performance. - Continue research efforts with the overarching objective of establishing the mathematical constructs, techniques, computational procedures, and scientific foundations for analysis/design of signal, image, control, and data generating systems for use in Navy, other DoW, dual-use, or commercial development programs. ***FY 2027 Base Plans:*** - Continue investigations into novel approaches to deep-generative machine learning-based algorithms and architectures for multi-static radar imaging to enable better noise robustness and resolution performance. - Continue research efforts with the overarching objective of establishing the mathematical constructs, techniques, computational procedures, and scientific foundations for analysis/design of signal, image, control, and data generating systems for use in Navy, other DoW, dual-use, or commercial development programs. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research efforts with the overarching objective of establishing the mathematical constructs, techniques, computational procedures, and scientific foundations for analysis/design of signal, image, control, and data generating systems for use in Navy, other DoW, dual-use, or commercial development programs.	0.000	2.297	2.074	0.000	2.074
Title: Expeditionary Cyber ***Description:*** Addresses the fundamental basic research and phenomenological studies to exploit new science to enable future successful offensive and defensive operations in the future operating environment. ***FY 2026 Plans:*** - Complete research into rethinking data security in a speculative, hammerable, and heterogeneous world. - Complete research into third generation network intrusion detection and prevention systems.	0.000	2.118	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete research into cyber-secure, power-aware, embedded, distributed, federated learning algorithms on resource constrained, sporadically connected systems. - Complete research into cyber-secure embedded auditable root-of-trust technologies for radio frequency-centric hardware to embed trust and assurance into expeditionary microelectronics. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and naval priorities.					
Title: Information Technology	0.000	14.088	4.944	0.000	4.944
FY 2026 Plans: - Continue research efforts in Environmentally-informed Decision Theory that focuses on the theory and understanding behind the information processing, analytics, optimization, information content, analysis, decision-making, and decision understanding needed to obtain decisive competitive advantage across the range of naval missions and levels of warfare that are significantly impacted by the environment and predictions of the environment. These efforts will focus on the creation and understanding of algorithms and software technologies that utilize environmental characterization or forecasts along with non-environmental information to support user-cognitive processes. Research efforts conducted in this area involves all elements of decision-relevant artificial intelligence, and places an emphasis on efforts that enable the ability to communicate the reasoning behind specific decision guidance. Recognizing the large amount of data required to generate decision guidance, the computationally difficult nature of optimizing large, complex problems, and the proliferation of disconnected and independent decision guidance systems, these efforts includes theory, approximations, and advanced heuristics aimed at tackling these challenges. - Continue research efforts in information management and human-machine interactions, decision superiority, detection of cognitive biases in decision-making, and efficient computation amongst multi-agent systems and Service Oriented Architectures. Research activities within this area will explore the theoretical underpinnings of systems modeling warfighter abilities, cognitive state, neurophysiological markers and behavior, enabling expert agents to identify bias and suggest alternative courses of action to decision-makers, as well as machine-based					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total

efforts at the basic science level to ensure software accuracy and proper function. Long term goals include foundational research in maritime AI-based algorithms on deployed Naval/Joint platforms, operating at the micro-level, with super-human speed and accuracy, and human interaction with deployed Adaptable Artificial Intelligence.

FY 2027 Base Plans:

- Continue research efforts in Environmentally-informed Decision Theory that focuses on the theory and understanding behind the information processing, analytics, optimization, information content, analysis, decision-making, and decision understanding needed to obtain decisive competitive advantage across the range of naval missions and levels of warfare that are significantly impacted by the environment and predictions of the environment. These efforts will focus on the creation and understanding of algorithms and software technologies that utilize environmental characterization or forecasts along with non-environmental information to support user-cognitive processes. Research efforts conducted in this area involves all elements of decision-relevant artificial intelligence, and places an emphasis on efforts that enable the ability to communicate the reasoning behind specific decision guidance. Recognizing the large amount of data required to generate decision guidance, the computationally difficult nature of optimizing large, complex problems, and the proliferation of disconnected and independent decision guidance systems, these efforts includes theory, approximations, and advanced heuristics aimed at tackling these challenges.

- Continue research efforts in information management and human-machine interactions, decision superiority, detection of cognitive biases in decision-making, and efficient computation amongst multi-agent systems and Service Oriented Architectures. Research activities within this area will explore the theoretical underpinnings of systems modeling warfighter abilities, cognitive state, neurophysiological markers and behavior, enabling expert agents to identify bias and suggest alternative courses of action to decision-makers, as well as machine-based efforts at the basic science level to ensure software accuracy and proper function. Long term goals include foundational research in maritime AI-based algorithms on deployed Naval/Joint platforms, operating at the micro-level, with super-human speed and accuracy, and human interaction with deployed Adaptable Artificial Intelligence.

FY 2027 OOC Plans:

N/A

FY 2026 to FY 2027 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY 2026 to FY 2027 is due to a realignment within the same PE from PU 1502: C5ISR/Naval Space to PU 1501: Autonomy/AI.					
Title: Networked Sensing	0.000	0.826	0.984	0.000	0.984
Description: The primary focus of the Networked Sensing program is to conduct basic research in optical components and infrared technologies to enable significant leap-ahead capabilities for the survivability and lethality of Naval forces in complex environments. ***FY 2026 Plans:*** - Continue research into physical and quantum limitations of photon detection to enhance understanding of light-matter interactions, beam control, and detection. - Continue research investigations regarding fundamental implications of classical entanglement on imaging and metrology. - Continue research efforts regarding the exploration of highly sensitive, multi-spectral detector materials and active sensing modalities for imaging through clouds, fog, haze and dust. - Continue research efforts to explore novel optical processing architectures to significantly increase signal-processing bandwidth and to enable novel, real-time, distributed sensing applications. - Continue research investigations into the direct measurement of current and phase at optical and infrared light frequencies to enable wider flexibility in signal extraction and waveforms. ***FY 2027 Base Plans:*** Networked Sensing: - Continue research into physical and quantum limitations of photon detection to enhance understanding of light-matter interactions, beam control, and detection. - Continue research investigations regarding fundamental implications of classical entanglement on imaging and metrology. - Continue research efforts regarding the exploration of highly sensitive, multi-spectral detector materials and active sensing modalities for imaging through clouds, fog, haze and dust. - Continue research efforts to explore novel optical (photonic integrated) processing architectures to significantly increase signal-processing bandwidth and to enable novel, real-time, distributed sensing applications. - Continue research investigations into the direct measurement of current and phase at optical and infrared light frequencies to enable wider flexibility in signal extraction and waveforms. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research into physical and quantum limitations of photon detection to enhance understanding of light-matter interactions, beam control, and detection.					
Title: Quantum Measurement Architectural Devices ***Description:*** The primary focus of the Quantum Measurement Architectural Devices activity is to conduct basic research in atomic, molecular and quantum systems to enable improved sensing and timekeeping capabilities for Naval forces in a contested environment. ***FY 2026 Plans:*** Quantum Measurement Architectural Devices: - Continue research efforts regarding the development of protocols for sensing and timekeeping devices based on quantum systems, including clocks with improved short and long-term performance and electromagnetic field sensors. - Continue research into the development of inertial and gravity sensors based on light-atom interferometry. - Continue research efforts on the capabilities of non-equilibrium many-body systems for novel metrology. - Continue research on cooling and trapping of molecules for quantum sensing. ***FY 2027 Base Plans:*** Quantum Measurement Architectural Devices: - Continue research efforts regarding the development of protocols for sensing and timekeeping devices based on quantum systems, including clocks with improved short and long-term performance and electromagnetic field sensors. - Continue research into the development of inertial and gravity sensors based on light-atom interferometry. - Continue research efforts on the capabilities of non-equilibrium many-body systems for novel metrology. - Continue research on cooling and trapping of molecules for quantum sensing. - Initiate research on nuclear atomic clock architectures. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in nuclear atomic clock architectures.	0.000	3.073	3.585	0.000	3.585
Title: Research Platforms	0.000	1.088	1.572	0.000	1.572

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The primary focus of the Research Platforms activity is to provide airborne research assets for collection of phenomenology data in real world environments in order to test new C5ISRT and Counter C5ISRT technologies and techniques. Data collection of this type is required to develop algorithms, train machine learning and test sensor capabilities to improve C5ISRT capabilities for Naval forces in complex electro-magnetic environments. ***FY 2026 Plans:*** Research Platforms: - Continue airborne collection of multi-modal signature and phenomenology for fundamental modelling and machine learning research. ***FY 2027 Base Plans:*** Research Platforms: - Continue airborne collection of multi-modal signature and phenomenology for fundamental modelling and machine learning research. - Initiate the modification and aircraft certification for collection Airborne high resolution radar clutter and hard target signature data. - Initiate the design and integration for autonomous track and trail delivery from manned aircraft. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 reflects increased investment to design and integrate an autonomous track and trail capability on manned aircraft.					
Accomplishments/Planned Programs Subtotals	0.000	57.921	47.576	0.000	47.576

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1503 / *Directed Energy & Kinetic Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1503: *Directed Energy & Kinetic Systems*	0.000	0.000	16.870	17.208	-	17.208	18.091	19.771	19.582	19.917	Continuing	Continuing

Note

Investments in Project 1503 Directed Energy & Kinetic Systems were previously funded in this same PE 0601153N under Project 1388 Directed Energy and Project 1393 Kinetic Weapons. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in directed energy and kinetic systems in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1503 Directed Energy & Kinetic Systems have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Directed Energy & Kinetic Systems activity develops technologies to advance Naval applications of both directed energy (DE) and kinetic weapons. The main focus of DE weapons is to develop technologies that enable laser and high-power microwave (HPM) weapon systems --within Navy and Marine Corps size, weight, and power (SWAP) constraints- to strike enemy targets and to defend naval platforms and land bases from threats. Additionally, the DE activity develops technologies that enable defense against adversary DE systems. The main focus of kinetic weapons is to develop technologies that address the Navy and Marine Corps fires requirements for extended range; increased precision; decreased weapons fly-out times; greater destructive power and novel effects; autonomy, swarming, and human-machine teaming; mission planning and decision making; reduced production costs, and increased inventory and availability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Advanced Energetic Materials	0.000	4.140	4.250	0.000	4.250
FY 2026 Plans: Initiate: - Research focused on developing advanced fuels for air-breathing ramjet applications along with building computational modeling tools for combustion performance prediction. - Investigation of new oxidizers and additives for next-generation solid propellants. Continue: - Research on new energetic materials and additives for solid propulsion and solid-fuel air-breathing propulsion applications. - Research on novel liquid fuel formulations along with studies on fundamental combustion reaction mechanisms for accurate modeling and prediction of new fuel performance.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research into novel synthetic methods for accessing new energetic chemicals or new routes to existing chemicals for easier/cheaper production. - Research on large-scale detonation-based combustion to allow better description and modeling of powerful yet complex metallized explosive formulations. - Research on chemical impulse actuation for aerodynamic flow control as a novel method to influence forces and shear on winged bodies. Complete: - Research on the quantification of pressure effects on the decomposition kinetics of energetic materials with solid propellant applications. - Research on metastable metal/ceramic nanocomposites in carbon-based scaffolds as energetic nanomaterials.					
FY 2027 Base Plans: Initiate: - Research on novel biocatalytic synthesis of highly strained carbocycles as a new low-cost, low toxicity route to energetic materials. - Research on the design and evaluation of hyper-reactive grain boundaries in nanocomposite energetic additives for munitions and reactive materials applications. - Research on engineering multicomponent crystal properties through cocrystallization and doping for solid propellant applications. Continue: - Research on novel liquid fuel formulations along with studies on fundamental combustion reaction mechanisms for accurate modeling and prediction of new fuel performance. - Research into novel synthetic methods for accessing new energetic chemicals or new routes to existing chemicals for easier/cheaper production. - Research on chemical impulse actuation for aerodynamic flow control as a novel method to influence forces and shear on winged bodies. - Research focused on developing advanced fuels for air-breathing ramjet applications along with building computational modeling tools for combustion performance prediction. - Investigation of new oxidizers and additives for next-generation solid propellants. - Research on new energetic materials and additives for solid propulsion and solid-fuel air-breathing applications.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research on large-scale detonation-based combustion to allow better description and modeling of powerful yet complex metallized explosive formulations. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding difference between FY26 and FY27.					
Title: Hypersonics ***FY 2026 Plans:*** Continue: - Research to address technologies needed for long-range weapon components that can survive high temperature exposure for several minutes and defeat anti-access / area denial countermeasures. - Investigating the hypersonic boundary-layers and shock-wave / boundary-layer interactions, prediction of hypersonic weapon flight performance and control, environment-material interactions, exploration of ultrahigh temperature materials, and technologies needed for high-speed propulsion. ***FY 2027 Base Plans:*** Continue: - Research to address technologies needed for long-range weapon components that can survive high temperature exposure for several minutes and defeat anti-access / area denial countermeasures. - Investigating the hypersonic boundary-layers and shock-wave / boundary-layer interactions, prediction of hypersonic weapon flight performance and control, environment-material interactions, exploration of ultrahigh temperature materials, and technologies needed for high-speed propulsion. Initiate: - Research supporting the development of Guidance, Navigation, and Control (GN&C) algorithms capable of handling uncertainties in aerodynamic coefficients and atmospheric conditions while providing fault tolerance and the ability to adapt to minimize negative aerodynamic effects. - Research to address the advancement of adaptive aerostructures and their fluid-thermal-structure interactions. Adaptive aerostructures and enabling technologies are needed to provide long-range weapon systems with novel methods of flow control and real-time control of aerodynamic forces, drag and heating loads reduction, as well as expanding the operational envelope of air-breathing propulsion systems. ***FY 2027 OOC Plans:***	0.000	3.796	3.977	0.000	3.977

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research supporting the development of Guidance, Navigation, and Control (GN&C) algorithms capable of handling uncertainties in aerodynamic coefficients and atmospheric conditions while providing fault tolerance and the ability to adapt to minimize negative aerodynamic effects.					
Title: Pulsed Lasers	0.000	3.377	3.550	0.000	3.550
FY 2026 Plans: Continue: - Research investigation of improved AI deep learning approaches for beaconless atmospheric turbulence prediction and compensation for deep turbulence. - Research into the evaluation of wavefront sensing, reconstruction, and control methods for deep turbulence in the laboratory. - Research on interaction of intense laser pulses with nanostructured surfaces, the role of disorder in promoting synchronization in technological systems of relevance to the Navy, hybrid quantum devices with the greatest technological impact to photonics and solid-state laser components, and extension of mode-locked laser and optical frequency comb technologies from the traditional near-infrared regime to new spectral regions. - Research on generation of high-average power ultra-broadband radio frequency and mid-infrared radiation in dielectrics and plasmas, effects of atmospheric turbulence on the propagation of laser beams having orbital angular momentum, demonstration of a compact solid-state laser source, demonstration of highly efficient frequency conversion of ultrashort pulse laser sources, and demonstration of ultrahigh peak power compact ultrashort sources in specific spectral ranges via advanced mode locking and chirped pulse amplification techniques. ***FY 2027 Base Plans:*** Initiate: - Improved understanding of Pulse Laser propagation mechanisms - Simulation and testing of pulse laser optical performance in complex environmental conditions - Research in novel pulse laser sources - Research in pulse laser interaction with materials - Research in pulse laser optics and beam directors - Research in pulse laser specific sensors and novel instrumentation					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete: - Research investigation of improved AI deep learning approaches for beaconless atmospheric turbulence prediction and compensation for deep turbulence. - Research into the evaluation of wavefront sensing, reconstruction, and control methods for deep turbulence in the field. - Research on interaction of intense laser pulses with surfaces, the role of disorder in promoting synchronization in technological systems of relevance to the Navy, hybrid quantum devices with the greatest technological impact to photonics and solid-state laser components, and extension of mode-locked laser and optical frequency comb technologies from the traditional near-infrared regime to new spectral regions. - Research on generation of high-average power ultra-broadband radio frequency and mid-infrared radiation in dielectrics and plasmas, effects of atmospheric turbulence on the propagation of laser beams having orbital angular momentum, demonstration of a compact solid-state laser source, demonstration of highly efficient frequency conversion of ultrashort pulse laser sources, and demonstration of ultrahigh peak power compact pulse sources in specific spectral ranges via advanced mode locking and pulse amplification techniques. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding difference between FY26 and FY27.					
Title: High Power Microwaves	0.000	1.578	1.541	0.000	1.541
FY 2026 Plans: Continue: - Research into solid-state and vacuum electronic based sources and amplifiers, antennas, high voltage storage switching components and power supplies, novel high power capable materials, radio-frequency coupling and electronic device interaction physics, predictive effects and modeling tools along with novel sensors and instrumentation at X-band and higher. - Research investigations in HPM technologies including not only consideration of sources, but also the supporting pulsed power, antennas, and other subsystems. - Research efforts in Solid-state and vacuum electronic based HPM sources capable of flexible waveforms. - Research in Distributed array sources for agile beamforming. - Research investigations of Low profile steerable antennas; high energy density capacitors, solid-state high voltage switches; high voltage power supplies, power electronics switches, hardened controls.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research in Novel materials - dielectric insulators, 3D printed materials, improved radome materials. - Research efforts in RF coupling, device interaction physics and component level effects. - Research in Wide-bandwidth high-power frequency agile amplifiers. - Research in Prediction of effects on electronics with improved techniques for HPM lethality testing and analysis from L band to X band and above. - Research in Novel HPM sensors including electronic battle damage indication (eBDI) instrumentation ***FY 2027 Base Plans:*** Continue: - Research investigations in low profile, conformal, lightweight antenna technology suitable for harsh shipboard environment, as well as distributed array concepts for agile beam forming and improved radome materials -Research into solid-state and vacuum electronic based sources, oscillators and amplifiers, capable of scaling to higher power and flexible waveforms, - Research efforts in compact, repetative pulsed power modulators and novel driver architectures for HPM sources, to include solid state switches, novel dielectric insulating materials, high energy density capacitor, and additive manufacturing of high voltage components. - Research efforts in RF coupling and device interaction physics on a wide variety of electronic systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding difference between FY26 and FY27.					
Title: High Energy Laser & Counter Directed Energy Weapons	0.000	3.685	3.890	0.000	3.890
FY 2026 Plans: Initiate: - Fabrication of first scale devices utilizing the Berkley Surface Emitting Laser (BerkSEL) at ARL/Adelphi to determine the potentials of DIRAC Cone metamaterial structures in a light emitting diode laser assembly. [CHPLST] - Initial fabrication of new photonic deformed optics, including a deformable mirror powered only by light, using recently university developed photo-actuator materials [MURI program spin off] Continue: - Examination of vertical cavity surface emitting laser diodes, as well as other compact high power photon emitters for compact high power laser source technologies [CHPLST]					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Exploration of the underlying physics of photonic creation, materials interaction, energy release and subsequent interactions with optical materials via computational and mathematical modeling, including machine learning to enable higher power and higher energy levels, - Research into next-generation photon waveform and mode shaping devices and interactions with materials, including metamaterials, to enable higher efficiency energy conversion designs within unique nanostructured materials with goal of increasing efficiency from source to release. - Examination of high energy laser-launched collimated photon interactions with the atmosphere, which are unique in propagation within the maritime domain, examining unique physical and optical interactions related to absorption, reflectance, scatter and turbulence often seen in expeditionary and at-sea conditions. - Research that will contribute to identifying new nanostructured materials, metamaterials and optical coatings processing for naval applications and investigate unique interactions of high energy photons with materials and coatings. - Both exploratory and confirmatory research with future naval application in directed energy & kinetic systems research areas (realigned from Project 1099).					
FY 2027 Base Plans: Initiate: - Research in optical phase mask (OPM) providing protection for sensors and platforms against threats from adversarial high energy laser systems Continue: - Fabrication of first scale devices utilizing the Berkley Surface Emitting Laser (BerkSEL) at ARL/Adelphi to determine the potentials of DIRAC Cone metamaterial structures in a light emitting diode laser assembly. - Examination of vertical cavity surface emitting laser diodes, as well as other compact high power photon emitters for compact high power laser source technologies [CHPLST] - Fabrication of new photonic deformed optics, including a deformable mirror powered only by light, using university developed photo-actuator materials [an ONR MURI program spin off] - Exploration of the underlying physics of photonic creation, materials interaction, energy release and subsequent interactions with optical materials via computational and mathematical modeling, including machine learning to enable higher power and higher energy levels, - Research into photon waveform devices, including metamaterials, to enable higher efficiency energy conversion designs					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Examination of high energy laser-launched collimated photon interactions with the atmosphere, which are unique in propagation within the maritime domain, examining unique physical and optical interactions related to absorption, reflectance, scatter and turbulence often seen in expeditionary and at-sea conditions. - Research identifying new nanostructured materials, metamaterials and optical coatings processing for naval applications and investigate unique interactions of high energy photons with materials and coatings. - Both exploratory and confirmatory research with future naval application in directed energy & kinetic systems research areas. Complete: - Research into some EMI waveform devices (e.g. phase shifting metamaterials) and their interactions with exotic materials, within unique nanostructured materials. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in optical phase mask (OPM) providing protection for sensors and platforms against threats from adversarial high energy laser systems.					
Title: Expeditionary Directed Energy ***Description:*** Addresses the fundamental basic research to understand directed energy systems and to counter future directed energy threats in the futures operating environment. ***FY 2026 Plans:*** - Complete basic research to conduct phenomenological studies involving the interaction of directed energy with matter. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***	0.000	0.294	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and naval priorities.					
Accomplishments/Planned Programs Subtotals	0.000	16.870	17.208	0.000	17.208

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1505 / *Human & Biological Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1505: *Human & Biological Systems*	0.000	0.000	45.510	30.847	-	30.847	30.341	31.982	33.256	32.266	Continuing	Continuing

Note

Investments in Project 1505 Human and Biological Systems were previously funded in this same PE 0601153N under Project 1386 Biomedical, Project 1392 Human Systems and Project 1396 Naval Engineering. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1505 Human & Biological Systems have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

Human and Biological Systems conducts fundamental research to enhance performance and effectiveness of naval personnel, technologies, and systems. This will integrate the complex relationships amongst humans, biological systems, and technology to develop revolutionary solutions that enhance physical and cognitive performance, safety, casualty care, training and readiness and reduce vulnerabilities in all domains.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Bio-Inspired Systems and Soft Robotics	0.000	2.942	2.542	0.000	2.542
Description: The aim of the Biosciences, Bioengineering, and Synthetic Biology planned program is to discover and develop biological and bioengineered solutions to expand current Naval capabilities in the domains of materials and manufacturing. Investments in innovative biotechnology research can enable critical Naval materials such as new biofuels for hypersonics and jet fuel, drastically increasing operational endurance and distance. This funding will spur the high-risk, high-reward research needed to deliver asymmetric advantages and solve our most pressing contested logistics challenges. This program invests in fundamental research projects that will enhance the US's ability to domestically produce critical materials, reducing reliance on foreign sources and securing supply chains for defense needs.					
FY 2026 Plans: - Complete research to understand how to leverage biological components, processes, and systems to develop energy, electronic, and sensing systems powered by biology. - Complete discovery of novel engineering methods to characterize constitutive properties of human organs, tissues and soft materials (e.g. viscoelasticity, thermal expansion, gas solubility).					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete to enhance modeling and simulation capabilities to create a bio-accurate human digital twin as a component of the design of ships, submarines, aircrafts and other platforms. - Continue basic research efforts utilizing microbes and biological components for materials synthesis (e.g. structural, color changing, thermal resistance). - Continue using synthetic biology and bioengineering to explore new pathways for the biosynthesis of Naval relevant compounds at point of need. - Initiate basic research efforts to understand how to develop domestic biomanufacturing routes for specialty chemicals and advanced materials critical for defense, reducing reliance on foreign suppliers and vulnerable supply chains. - Initiate exploration of bio-based solutions for protecting personnel and equipment from harmful agents and biofouling, enhancing operational readiness. - Initiate innovative, biologically derived methods that will protect naval assets from degradation, and maintain operational readiness in challenging Naval environments. - Initiate basic research to identify specialized biocatalysts capable of breaking down waste and contaminants in extreme cold environments, enabling sustained Naval operations in arctic regions.					
FY 2027 Base Plans: - Continue basic research efforts utilizing microbes and biological components for development of materials. - Continue using biotechnology and bioengineering to explore new pathways for the biosynthesis of Naval relevant compounds at point of need. - Continue basic research efforts to understand how to develop domestic biomanufacturing routes for specialty chemicals and advanced materials critical for defense, reducing reliance on foreign suppliers and vulnerable supply chains. - Continue exploration of bio-based solutions for protecting personnel and equipment from harmful agents and biofouling, enhancing operational readiness. - Continue innovative, biologically derived methods that will protect naval assets from degradation, and maintain operational readiness in challenging Naval environments. - Continue basic research to identify specialized biocatalysts capable of breaking down waste and contaminants in extreme cold environments, enabling sustained Naval operations in arctic regions.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY 2026 to FY 2027 is due to a reduced investment in experimental sensing capabilities.					
Title: Biosciences, Bioengineering, and Synthetic Biology	0.000	6.759	7.234	0.000	7.234
Description: The aim of the Biosciences, Bioengineering, and Synthetic Biology planned program is to discover and develop biological and bioengineered solutions to expand current Naval capabilities in the domains of materials and manufacturing. Investments in innovative biotechnology research can enable critical Naval materials such as new biofuels for hypersonics and jet fuel, drastically increasing operational endurance and distance. This funding will spur the high-risk, high-reward research needed to deliver asymmetric advantages and solve our most pressing contested logistics challenges. This program invests in fundamental research projects that will enhance the US's ability to domestically produce critical materials, reducing reliance on foreign sources and securing supply chains for defense needs. ***FY 2026 Plans:*** - Complete research to understand how to leverage biological components, processes, and systems to develop energy, electronic, and sensing systems powered by biology. - Complete discovery of novel engineering methods to characterize constitutive properties of human organs, tissues and soft materials (e.g. viscoelasticity, thermal expansion, gas solubility). - Complete to enhance modeling and simulation capabilities to create a bio-accurate human digital twin as a component of the design of ships, submarines, aircrafts and other platforms. - Continue basic research efforts utilizing microbes and biological components for materials synthesis (e.g. structural, color changing, thermal resistance). - Continue using synthetic biology and bioengineering to explore new pathways for the biosynthesis of Naval relevant compounds at point of need. - Initiate basic research efforts to understand how to develop domestic biomanufacturing routes for specialty chemicals and advanced materials critical for defense, reducing reliance on foreign suppliers and vulnerable supply chains. - Initiate exploration of bio-based solutions for protecting personnel and equipment from harmful agents and biofouling, enhancing operational readiness. - Initiate innovative, biologically derived methods that will protect naval assets from degradation, and maintain operational readiness in challenging Naval environments. - Initiate basic research to identify specialized biocatalysts capable of breaking down waste and contaminants in extreme cold environments, enabling sustained Naval operations in arctic regions. ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue basic research efforts utilizing microbes and biological components for development of materials. - Continue using biotechnology and bioengineering to explore new pathways for the biosynthesis of Naval relevant compounds at point of need. - Continue basic research efforts to understand how to develop domestic biomanufacturing routes for specialty chemicals and advanced materials critical for defense, reducing reliance on foreign suppliers and vulnerable supply chains. - Continue exploration of bio-based solutions for protecting personnel and equipment from harmful agents and biofouling, enhancing operational readiness. - Continue innovative, biologically derived methods that will protect naval assets from degradation, and maintain operational readiness in challenging Naval environments. - Continue basic research to identify specialized biocatalysts capable of breaking down waste and contaminants in extreme cold environments, enabling sustained Naval operations in arctic regions. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to an increased investment in efforts exploring bio-based solutions for protecting personnel and equipment from harmful agents and identifying specialized biocatalysts capable of breaking down waste and contaminants in extreme cold environments.					
Title: Expeditionary Biomedical ***Description:*** Addresses the fundamental basic research and phenomenological studies into the science of health, survivability, and recovery of naval expeditionary forces operating in austere, distributed, and isolated maritime environments and to enable fundamentally new biomedical applications in the future operating environment. ***FY 2026 Plans:*** - Complete fundamental research towards autonomous casualty care for severe trauma in austere conditions with the intent to gain the understanding needed to extend the survivability window for acute traumatic injuries significantly beyond the 'golden hour'. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	0.000	1.719	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.					
Title: Expeditionary Naval Engineering ***Description:*** Addresses the fundamental basic research to support new science advancements that enhance cognitive and physical performance, and augment warfighter-machine teaming for greater operational effectiveness in the future operating environment. ***FY 2026 Plans:*** - Complete efforts to study the complex energy-supply problem with deployed vehicles in contested environments en-route to developing a novel decision-support framework for planning and managing adaptive transportation systems for naval logistics. (Expeditionary Warfare) - Complete research for modeling autonomy, for the purpose of creating systems that operate in complex undersea/surface/ land/air/space domains. (Expeditionary Warfare) - Complete research methods that model how diverse autonomous systems interact with each other in complex environments. (Expeditionary Warfare) - Complete research investigations regarding the creation of Artificial Intelligence (AI) hybrid learning theories for the purpose of creating heterogeneous multi-agent collaborative autonomy. (Expeditionary Warfare) - Complete research to create theories for multi-agent collaborative autonomy that mimic the organizational principles found in social insects/birds/fishes. (Expeditionary Warfare) - Complete a follow-on and focused research effort for the machine learning investigation of multifactorial information environment parameters in order to automate the process of detecting, identifying and distinguishing intent. (Expeditionary Warfare) - Complete research to study novel collaborative methods for swarming autonomous entities to reliably determine true/relative position in GPS-denied operations. (Expeditionary Warfare) - Complete research investigations regarding learning theories to enable complex, collaborative, human-machine interactions. - Complete research efforts on means and methods for evaluating the reliability and effectiveness of collective decision making by autonomous systems and humans.	0.000	2.882	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete work in immersive sciences to generate 3D objects via photogrammetry and generative artificial intelligence techniques, and to conduct research studies to optimize user interfaces and information displays to increase understanding and use of Extended Reality (XR) technologies for naval applications. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.					
Title: Human-Level Artificial Intelligence and Autonomy	0.000	4.922	4.619	0.000	4.619
Description: Mission sets and operational threats continue to evolve, and weapons platform technologies continue to advance. As a result, the manner in which Sailors will be employed must adapt in new and to-be-determined ways, making continued human systems science and technology efforts crucial to maintaining a decisive advantage over our adversaries. The Human-Level Artificial Intelligence and Autonomy planned program will enable basic research on hybrid teams of Sailors and autonomous systems that make optimal use of their capabilities to conduct missions, such as breaching buildings and shipboard maintenance and damage control. ***FY 2026 Plans:*** - Complete research investigations regarding principles of warfighter collaboration with autonomous and mission-capable robotic systems. - Complete research that explores the neural basis of the control of reaching, grasping and manipulation to inform robotics. - Continue research efforts to explore training of terrestrial robots using machine learning and human demonstration to perform complex skills, door opening, and use of stair railings. - Continue research exploring the combination of robot mobility with dexterous manipulation in assisting humans on Naval relevant tasks, such as shipboard maintenance. - Continue research regarding human-machine speech communication and computational modeling to support the framework and architectures necessary to develop higher-level collaboration in robotic and autonomous systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research to understand the psychological foundation of human intelligence that enables cognitive functions, such as communication, social interaction, and context understanding. ***FY 2027 Base Plans:*** - Continue research efforts to explore training of terrestrial robots using machine learning and human demonstration to perform complex skills, door opening, and use of stair railings. - Continue research exploring the combination of robot mobility with dexterous manipulation in assisting humans on Naval relevant tasks, such as shipboard maintenance. - Continue research regarding human-machine speech communication and computational modeling to support the framework and architectures necessary to develop higher-level collaboration in robotic and autonomous systems. - Continue research to understand the psychological foundation of human intelligence that enables cognitive functions, such as communication, social interaction, and context understanding. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to a reduced investment in human-machine speech communication and computational modeling.					
Title: Sailor Health and Performance ***Description:*** The Sailor Health and Performance planned program investigates research that will enhance the performance, health, survivability, and recovery of Sailors operating in austere, distributed, and isolated maritime environments. The objectives are to enable Naval forces to bring their biomedical capacity forward, support prolonged field care, and enable casualty evacuation in Naval operating environments. Foundational research in human performance in unique Naval environments (e.g., distributed maritime environment, deep sea, extreme cold water) will: enable next-generation capabilities to improve Sailor survivability and response effectiveness during mass casualty incidents at sea; enable proof-of-concept solutions that inform the development of advanced Naval protective equipment, medical care, and predictive modeling for extreme cold water environments; and mitigate unique Naval performance and health challenges associated with hyperbaric exposure. The research areas described in this planned program were previously represented under the Naval Force Health Protection and Human Performance planned program within PE 0601153N Defense Research Sciences	0.000	4.182	7.984	0.000	7.984

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Project 1386 and the Warfighter Lethality and Survivability planned program in PE 0601153N Defense Research Sciences Project 1505. These planned programs were merged to align with strategic planning documentation. ***FY 2026 Plans:*** - Complete studies to enhance our understanding of human physiology that leverage insights from comparative physiology studies of marine mammals in the undersea environment. - Complete the development of computational models of the cellular metabolism in high oxygen and carbon dioxide conditions as experienced by Naval divers. - Complete research efforts to examine the impact of an acutely stressful environment on the function of the stress response system. - Continue research efforts into fundamental concepts underlying passive and/or automated personnel location and proof of life technologies for personnel lost at sea. - Continue research efforts to bridge fundamental gaps related to real-time sensing and observation of individual responses to environmental and operational stressors. - Continue research to identify novel approaches to support underwater breathing apparatus, utilizing resources naturally present in the ocean for gas management. - Continue fundamental research to understand the pulmonary physiology of exposure to altered levels of oxygen and carbon dioxide. - Continue studies to explore use of porous liquids as novel gas management for biomedical applications to include Nitrogen capture for Decompression Sickness mitigation. - Continue research into modeling efforts to inform design of Sailor-centric devices and interfaces to enhance Sailor and Marine protection and health. - Continue to explore the ability to predict injury-induced physiological states in combat casualties using microelectronic sensors to guide medical control systems. - Continue medical research to prevent physiological degradation and improve survivability at point of injury in the maritime environment. - Initiate the development of programmable microbes that increase heat production in response to temperature decreases in the animal or human body. - Initiate research to explore new expeditionary use-cases for Navy's marine life. ***FY 2027 Base Plans:*** - Complete research efforts into fundamental concepts underlying passive and/or automated personnel location and proof of life technologies for personnel lost at sea.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete the development of programmable microbes that increase heat production in response to temperature decreases in the animal or human body. - Complete exploration of the ability to predict injury-induced physiological states in combat casualties using microelectronic sensors to guide medical control systems. - Continue development of human performance algorithms using biosensors and microelectronics to detect fatigue, loss of attention, physiological states and environmental conditions. - Continue studies to address current fundamental physiological (e.g. frostbite) and cognitive challenges with operations in extreme cold or austere Naval environments. - Continue studies to address fundamental conceptual challenges underlying personal protective technology gaps with operations in extreme cold or austere Naval environments. - Continue studies to enhance our understanding of human physiology that leverage insights from comparative physiology studies of marine mammals in the undersea environment. - Continue research efforts to bridge fundamental gaps related to real-time sensing and observation of individual responses to environmental and operational stressors. - Continue research to identify novel approaches to support underwater breathing apparatus, utilizing resources naturally present in the ocean for gas management. - Continue fundamental research to understand the pulmonary physiology of exposure to altered levels of oxygen and carbon dioxide. - Continue research to explore new expeditionary use-cases for Navy's marine life. - Continue research into modeling efforts to inform design of Sailor-centric devices (e.g., Naval aircraft seating, Naval personal protective equipment) and interfaces (e.g., autonomous evacuation platforms) to enhance protection and health of Sailors and Marines. - Continue medical research to prevent physiological degradation and improve survivability at point of injury in the maritime environment. - Initiate research to characterize cognitive response under pressure exposures and various gas mix breathing. - Initiate exploration of injury exacerbation and resuscitation needs during autonomous casualty evacuation of Sailors and Marines. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY2026 to FY2027 is due to merging the Warfighter Lethality and Survivability planned program in PE 0601153N Defense Research Sciences Project 1505 with the Naval Force Health Protection Planned Program to align research efforts with strategic planning documentation. The funding					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
increase will be used to expand modeling efforts to inform design of Sailor-centric devices (e.g., Naval aircraft seating, Naval personal protective equipment) and interfaces (e.g., autonomous evacuation platforms) to enhance protection and health of Sailors and Marines.					
Title: Physiological Monitoring and Modeling	0.000	10.738	0.000	0.000	0.000
Description: The Physiological Monitoring and Modeling activity explores the Biomanufacturing Sciences and Biology, Materials and Warfighter Interfaces. Biomanufacturing research activities addresses biological processes required for the synthesis of materials, including harnessing existing cellular production, isolation and utilization of cellular components or pathways, and modification of cellular systems to develop and optimize novel pathways or products. Biotechnology and bioinspired process research explores the potential of components, biological and otherwise, to activate processes for on-demand control, delivery of a product or package, interrogation of a response, stimulation of a behavior change, and similar actions that may require interfacing across a large range of scales (via organism, organ, cell, protein, etc.). The research areas described in this planned program were previously represented under the Physiological Monitoring and Modeling planned program in PE 0601153N Defense Research Sciences Project 1387. ***FY 2026 Plans:*** - Complete research into Biomanufacturing Science. Biomanufacturing utilizes biological processes for the synthesis of materials, including harnessing existing cellular production, isolation and utilization of cellular components or pathways, and modification of cellular systems to develop and optimize novel pathways or products. - Complete research efforts into Biology, Materials and Warfighter Interfaces to develop an understanding of the essential components and approaches needed for control of biomaterial properties as well as function, enabling novel sensing and signaling, cellular reprogramming, and design of biomimetic materials. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease in funding from FY 2026 to FY 2027 is due to completion of biomanufacturing science research and design of biometric materials.					
Title: Warfighter Decision Superiority and Readiness	0.000	8.320	8.468	0.000	8.468
Description: This planned program will provide a deeper understanding of how Sailors sense, process, and use information to make decisions. This program includes research to: 1) increase our understanding of decision-making and personnel selection and assignment to enable streamlined talent management; 2) explore foundational research to detect and combat information warfare through the exploration of new analytics, modeling and simulation tools; and 3) optimize decision-making, and enhance readiness and cognitive science to improve training, education, and operations through foundational research in the science of learning that are unique to Live, Virtual, and Constructive environments to increase mission effectiveness. ***FY 2026 Plans:*** Analytics, Modeling and Simulation for Local and Regional Situation Awareness - Complete research investigations regarding mechanisms of crowd manipulation, social hysteria, rumor and propaganda in online and offline audiences. - Complete research efforts to develop models on the impact of spreading false information and geo-political shifts on the future of conflict in the next decade. - Complete research on novel socio-computational techniques to model audience resilience to persuasion, propaganda, and influence campaigns. - Complete research to develop understanding of how influence campaigns in digital and social media affect decision making. - Complete research of emerging and novel threats in cyberspace and in key military operations to include civil stability, and countering influence operations. - Complete research of understanding the anthropological, sociological and socio-psychological factors that alter the effects of influence operations against US interests abroad. - Complete research efforts exploring methods and techniques to detect, mitigate, blunt, and defeat influence campaigns. - Complete research investigations of country-centric, descriptive and computational models of national resource and security issues to lay the foundation for forecast models relevant to military missions. - Complete research efforts to address novel conflict problems such as water security, information warfare, and basic research in social shifts relevant to national security issues, hybrid warfare and other novel conflict problems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue multidisciplinary basic research efforts regarding national security issues, hybrid warfare, and related issues to address information advantage. - Continue research to improve current methods (e.g., algorithms, models) for detecting adversarial information maneuvers across social media platforms. - Continue case study research to develop forecast models on human behavior that leverage artificial intelligence. - Continue research to understand effective leadership decision making in the face of information conflict, modeling human behavior, and the perception of information and cyber warfare. - Continue research to understand effective communications strategies in the face of information conflict. - Initiate research to create models and simulations for modeling and simulation of information warfare. - Initiate innovative research in counterfactual modeling for military mission planning. Training and Education for Naval Readiness - Complete exploration of the role of attention in intelligent sensing with a focus on radiated acoustic signals in noisy environments. - Complete research to improve analytical approaches to understand human behavior based on real world data. - Complete research to understand fundamentals of unit behavioral health (e.g. team dynamics, command/ organizational performance). - Continue to study the use of artificial intelligence-based approaches for adaptive training, tailored to individual learners. - Continue to investigate the neuro-cognitive processes of attention, discover the mechanisms underlying its control, and explore cognitive models of attention control. - Continue research efforts to increase understanding of psychometric properties of selection/assessment for high performing service members. - Continue research to expand theories and establish validated predictive models of destructive social behaviors (e.g., attempting suicide, compulsive activities, risky behavior, overusing alcohol, toxic leadership). - Continue research exploring innovative technologies for real-time sensing and observation of individual behavioral responses to social and operational stressors. - Continue studies to investigate attention control techniques to enhance task focus and content mastery during training and operations. - Continue studies in science of learning that are unique to Live, Virtual, and Constructive environments to increase training effectiveness.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research efforts to increase understanding and validity of Navy leader/leadership assessment and development.					
FY 2027 Base Plans: Analytics, Modeling and Simulation for Local and Regional Situation Awareness - Complete research to understand effective communications strategies in the face of information conflict. - Complete research to improve current methods (e.g., algorithms, models) for detecting adversarial information maneuvers across social media platforms. - Complete case study research to develop forecast models on human behavior that leverage artificial intelligence relevant to complex mission planning. - Complete research to understand effective leadership decision making in the face of information conflict, modeling human behavior, and the perception of information and cyber warfare. - Continue multidisciplinary basic research efforts regarding national security issues, hybrid warfare, and related issues to address information advantage. - Continue research efforts exploring methods and techniques to detect, mitigate, blunt, and defeat influence campaigns. - Continue research to create models and simulations for modeling and simulation of information warfare. - Continue innovative research in counterfactual modeling for military mission planning. - Initiate research to develop course-of-action decision support in complex operations in the information environment. - Initiate research on network graph approaches to threat assessment in the information environment to include multi-disciplinary research to address problems of detecting and mitigating multiple forms of cyberattack and information warfare. Training and Education for Naval Readiness - Complete investigation of the neuro-cognitive processes of attention, discover the mechanisms underlying its control, and explore cognitive models of attention control. - Complete research to expand theories and establish validated predictive models of destructive social behaviors (e.g., attempting suicide, compulsive activities, risky behavior, overusing alcohol, toxic leadership). - Complete studies to investigate attention control techniques to enhance task focus and content mastery during training and operations. - Continue research efforts to increase understanding and validity of Navy leader/leadership assessment and development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts to increase understanding of psychometric properties of selection/assessment for high performing service members. - Continue research exploring innovative technologies for real-time sensing and observation of individual behavioral responses to social and operational stressors. - Continue to study the use of artificial intelligence-based approaches for adaptive training, tailored to individual learners. - Continue studies in science of learning that are unique to Live, Virtual, and Constructive environments to increase training effectiveness. - Initiate research to validate new approaches and assessments of human characteristics and behavior with fleet-relevant metrics. - Initiate research emerging technology capability to support, expand, and improve leadership assessment and development. - Initiate research to understand neurological and physiological measurements to optimize selection and assignment of personnel across Naval environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Warfighter Lethality and Survivability	0.000	3.046	0.000	0.000	0.000
Description: In operational environments with limited communications and extensive use of autonomous and unmanned systems, commanders will rely even more on decentralized control enabled by cohesive human-machine teams. Physical and cognitive enhancement capabilities will ensure warfighters are ready to meet a wide range of unanticipated, complex, and dynamic challenges. The Warfighter Lethality and Survivability planned program focuses on basic research that will enhance warfighter performance attributes needed to execute distributed maritime operations. The research areas described in this planned program have been realigned to the Sailor Health and Performance Planned Program within this same PE 0601153N Defense Research Sciences, Project 1505. ***FY 2026 Plans:*** - Complete research investigations to characterize novel physiologic signal monitoring capabilities.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete studies of optimal performance techniques in high-stress maritime environments such as firefighting afloat. - Complete research to enhance and quantify warfighter physiological performance for improved capabilities across military operations. - Complete research on wearable materials either on skin or clothing to meet current and future naval needs in different settings. - Complete development of human performance algorithms using biosensors and microelectronics to detect fatigue, loss of attention, physiological states and environmental conditions. - Complete studies to address current fundamental physiological (e.g. frostbite) and cognitive challenges with operations in extreme cold or austere environments. - Complete studies to address fundamental conceptual challenges underlying personal protective technology gaps with operations in extreme cold or austere environments. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease due to realignment of resources to Sailor Health and Performance portfolio.					
Accomplishments/Planned Programs Subtotals	0.000	45.510	30.847	0.000	30.847

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1506 / *Materials/Electronics*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1506: *Materials/Electronics*	0.000	0.000	114.753	109.579	-	109.579	112.643	117.389	123.193	119.362	Continuing	Continuing

Note

Investments in Project 1506 Materials/Electronics were previously funded in this same PE 0601153N under Project 1389 Electromagnetic Spectrum, 1390 Electronics and 1395 Materials. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1506 Materials/Electronics have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

This Focus Area (FA) enhances the performance, affordability, survivability, and reliability of the future fleet and force by developing materials with novel or enhanced properties suited to the unique needs of Navy and Marine Corps platforms and systems. Research relevant to enabling enhanced performance and resiliency of naval systems and platforms are included in this R-2 Activity.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Electronics and Sensors Technology	0.000	4.876	4.036	0.000	4.036
Description: This activity includes basic research efforts directed toward increasing knowledge, components and algorithmic advances for electronics and sensing ensuring the Navy can counter current and future threats. These efforts are applicable to electronics and sensing on individual Naval platforms, as well as efforts that aggregate capabilities in a Distributed Maritime Operation. Research efforts include: sensing, diagnostics, and detectors; nanoelectronics; wide band gap power devices; real-time targeting; Electro-Optical/Infra-Red (EO/IR) electronics; EO/IR sensors for surface/aerospace surveillance; Radio Frequency (RF) sensors for surface/aerospace surveillance; and solid-state electronics.					
FY 2026 Plans: Electronics and Sensors Technology: - Continue research investigations in nitrogen-polar GaN materials and device physics. - Continue research in porous III-Nitride materials. - Continue research efforts investigating defects and material stability of nitrogen-polar GaN materials and devices.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research investigations into p-type and n-type crystalline metal nitride materials, transport properties and heterostructures. - Continue research investigations in superconducting GaN materials and device development. - Continue studies on superconducting GaN functional circuits. - Continue research efforts to create new knowledge and understanding and explore new concepts, components, techniques and methods, for the design, growth, and characterization of electronic, electromagnetic, quantum enabled, and electro-optical materials; fabrication processes, electronic and electro-optic components, including novel electromagnetic concepts and techniques, and plasma phenomena and theory. - Continue experimenting with ways cryogenic microelectronics (cryo-CMOS and superconducting) and RF photonics may uniquely enable ideal ultra-wideband receivers (full spectrum, real time, fully adaptive reception of all simultaneous signals-of-interest and functional in the presence of significant uncooperative interference). - Continue investigation of properties of low Vpi electro-optical modulators for unamplified analog RF data links. - Continue research on optimal architecture for ultra-wideband, high sensitivity receivers, including the use of machine learning based adaptive DSP in a cueing architecture. - Continue studies of device materials hybridization Photonic Integrated Chips containing III-V, Chalcogenide, Si, and SiN photonic devices. - Continue research on non-linear/quantum phenomena that can lead to auto-adaptive interference excision. - Continue studies of physics of phonon/photon interactions in devices built via microelectronic techniques. - Complete research exploring feasibility of 3D stacked superconducting devices for SWaP reduction. - Initiate direct comparison of defects in epitaxially grown LiNbO3 and BaTiO3 used for EO applications. - Initiate study of whether multiband imaging spectroscopy is feasible at 100 MHz frame rates and useful for hypersonic vehicle targeting. - Initiate research on non-linear and multi-excitation physics that can lead to auto-adaptive interference excision in wideband STAR receivers.					
FY 2027 Base Plans: Electronics and Sensors Technology: - Continue research efforts to create new knowledge and understanding and explore new concepts, components, techniques and methods, for the design, growth, and characterization of electronic, electromagnetic, quantum enabled, and electro-optical materials; fabrication processes, electronic and electro-optic components, including novel electromagnetic concepts and techniques, and plasma phenomena and theory. - Continue research investigations in nitrogen-polar GaN materials and device physics.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts investigating defects and material stability of nitrogen-polar GaN materials and devices. - Continue research in porous III-Nitride materials. - Continue research investigations into p-type and n-type crystalline metal nitride materials, transport properties and heterostructures. - Continue investigation of properties of low Vpi electro-optical modulators for unamplified analog RF data links. - Continue studies of processing capabilities of Photonic Integrated circuit components/photonic microelectronics. - Continue studies of device materials hybridization Photonic Integrated Chips containing III-V, Chalcogenide, Si, and SiN photonic devices. - Continue direct comparison of defects in epitaxially grown LiNbO3 and BaTiO3 used for EO applications. - Continue research on optimal architecture for ultra-wideband, high sensitivity receivers, including the use of machine learning based adaptive DSP in a cueing architecture. - Continue research on non-linear/quantum phenomena that can lead to auto-adaptive interference excision. - Continue research on non-linear and multi-excitation physics that can lead to auto-adaptive interference excision in wideband STAR receivers. - Continue study of whether multiband imaging spectroscopy is feasible at 100 MHz frame rates and useful for hypersonic vehicle targeting. - Complete experimenting with ways cryogenic microelectronics (cryo-CMOS and superconducting) and RF photonics may uniquely enable ideal ultra-wideband receivers (full spectrum, real time, fully adaptive reception of all simultaneous signals-of-interest and functional in the presence of significant uncooperative interference). - Complete studies on superconducting GaN functional circuits. - Complete research investigations in superconducting GaN materials and device development. - Complete studies of physics of phonon/photon interactions in devices built via microelectronic techniques. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects reduced investments in superconducting electronics technology.					
Title: Nanoscale Computing Devices and Systems ***Description:*** The Nanoscale Computing Devices and Systems activity invests in innovative research and breakthrough scientific discoveries that will inform the development of future technologies.	0.000	5.337	4.722	0.000	4.722

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: - Continue research efforts on ultra-low power nanoelectronic materials, devices, and architectures. - Continue research explorations of topological quantum computing in solid-state devices. - Continue research efforts exploring new platforms for probabilistic computing in stochastic networks. - Continue investigation of novel physical phenomena in quantum materials. - Continue research on coherent manipulation and interrogation of atomic and molecular spin qubits. ***FY 2027 Base Plans:*** Nanoscale Computing Devices and Systems: - Continue research efforts on ultra-low power nanoelectronic materials, devices, and architectures. - Continue research efforts exploring new platforms for probabilistic computing in stochastic networks. - Continue investigation of novel physical phenomena in quantum materials. - Continue research on coherent manipulation and interrogation of atomic and molecular spin qubits. - Complete research explorations of topological quantum computing in solid-state devices. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research in explorations of topological quantum computing in solid-state devices.					
Title: Functional Materials ***Description:*** Research to expedite materials discovery and development through extensive use of AI/ML-based computational approaches, coupled with methodical experimental characterization of materials systems. The effort also includes understanding and development of processing approaches for extreme materials, such as high-temperature ceramics. The research area not only expects aggressive use of computational tools to speed up the discovery and design process for these materials but also to drive down the overall development cost. ***FY 2026 Plans:*** - Continue research to explore opportunities for controlling material composition and atomic structure through characterization and modeling to enhance electro-mechanical coupling for next generation Acoustic Transduction and Sensor Materials.	0.000	7.172	6.256	0.000	6.256

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research to better understand the chemical and mechanical properties of Materials for Environment Quality. ***FY 2027 Base Plans:*** - Continue research to explore opportunities for controlling material composition and atomic structure through characterization and modeling to enhance electro-mechanical coupling for next generation Acoustic Transduction and Sensor Materials. - Continue research to better understand the chemical and mechanical properties of materials for durable surface treatments to impart both resistance to fouling and facilitate removal of biofoulers between maintenance intervals. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research to explore opportunities for controlling material composition and atomic structure through characterization and modeling to enhance electro-mechanical coupling for next generation Acoustic Transduction and Sensor Materials.					
Title: Materials ***Description:*** Research relevant to enabling enhanced performance and resiliency of naval systems and platforms. ***FY 2026 Plans:*** - Continue research efforts regarding Corrosion Control Science (for conventionally and additive manufactured materials) including galvanic and microbially influenced corrosion for enhanced resiliency and sustainability of naval platforms and systems. - Continue research of Electrochemical Materials and Functional Organic Materials and Composites to understand phenomenology that can be applied to more efficient energy capture and power storage and distribution for a wide distribution of naval emerging requirements, - Continue research investigations of Computer-Aided Material Design to accelerate research in all areas described here. - Continue work into Corrosion and Interfacial Chemistry. Efforts in this area of research target an understanding of corrosion and interfacial chemistries/processes to develop new materials technologies and control measures to ensure Fleet readiness, critical operations, and survivability.	0.000	7.690	6.022	0.000	6.022

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts into Materials Chemistry and Diagnostics. The focus of these efforts are on the chemical synthesis, structure/property relationships and processing of inorganic, organic, organometallic, biochemical, polymeric, ceramic and nanoparticle materials. Synthesis and advanced processing efforts address Materials for Extreme Environments - polymer and ceramic matrix composites, thermal protection, camouflage, obscurants, directed energy protection, especially for hypersonic applications; Soft Materials - functional and bio-inspired polymers, catalytic polymers, fire suppressant molecules, soft robotics, self-reporting materials, smart materials. - Continue efforts into Materials Processes and Performance. Efforts focus on the discovery and advancement of new and improved structural and functional high performance materials including advances and discovery of new fabrication methods associated understanding of these methods for the consistent production of these new materials. - Continue in Materials for Advanced Sensor Science. Research in this area focuses on the physical properties of materials for the discovery of new functionality with direct application to sensing and advanced electronic devices. The work performed in this area utilizes novel experimental methods, as well as theoretical and computational models to identify and understand materials behavior spanning the range of physical properties of materials including electronic, magnetic, optical, and quantum behaviors. A primary technical objective is to identify new functional materials or new methods to control the functionality of materials to enhance current or enable new sensing capabilities. Evaluation of properties is performed across scales and conditions pertinent to naval applications. Specific areas of research include investigations into enhancing performance of sensing materials through engineering properties of 2D heterostructures, control of optoelectronics properties of halide perovskites, and ferroelectric materials to enable revolutionary advances in sonar device sensitivity. - Continue Materials Modeling, Simulation and Analytics. This research focuses on use of computational methodologies and manipulation of data to discover, identify, and interpret new and innovative insights into material performance and processing methodologies. Efforts aim to investigate the behavior of materials, materials synthesis, processing and characterization, modification of surfaces and plasma processing and engineered materials. Specific areas of research include first principle understanding of material response, advanced modeling and simulation techniques which can address performance of a variety of material systems, design tools for active materials for sensors and actuators, and advances in the algorithmic processes for rapid trace explosives detection. - Continue work into Biologically Enabled Materials. Here, the fundamental properties of the materials are investigated to provide the basis for sensing and actuation approaches, bioelectronics, organizational and structural mechanisms, and protective strategies, driving the underlying concepts and modeling necessary to the application of these novel products to Navy relevant systems and environments. Novel, new, and emerging biomaterials have been touted as the heart of regenerative medicine and the fabric of the medical devices market; however, bio, bioinspired, and bioderived materials offer a wider spectrum of applications than this					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
attention would tend to indicate. From thermal and corrosion protection to waveguide technologies, attritable formulations, and energy transfer, these materials offer novel capabilities that can be harnessed to meet Navy needs. Realization of these applications requires a fundamental understanding of how the materials function and how that function can be adapted to non-native environments and use scenarios. ***FY 2027 Base Plans:*** - Complete research efforts regarding Corrosion Control Science (for conventionally and additive manufactured materials) including galvanic and microbially influenced corrosion for enhanced resiliency and sustainability of naval platforms and systems. - Complete research of Electrochemical Materials and Functional Organic Materials and Composites to understand phenomenology that can be applied to more efficient energy capture and power storage and distribution for a wide distribution of naval emerging requirements, - Complete research investigations of Computer-Aided Material Design to accelerate research in all areas described here. - Continue research on controlling material composition and atomic structure through characterization and modeling to enhance electro-mechanical coupling for next generation Acoustic Transduction and Sensor Materials. - Continue research on functional organic materials and composites to understand phenomenology that can be applied to more efficient energy capture and distribution for emerging naval requirements. - Continue material development for multifunctional capabilities such as coatings that both protect a substrate and harvest energy, function as a sensor or limit platform signatures. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to realignment of funding within this PU to better align funding to current naval and administrative priorities. FY 2026 efforts were moved from this R2A to R2A Materials and Chemistry under the same PU in FY 2027.					
Title: Structural Materials ***Description:*** Research on galvanic corrosion of metal alloys, development of Navy functional coatings, and investigation of corrosion mechanisms in marine-influenced environments. The RA research also encompasses the fundamental interfacial physical, chemical, and biological interactions that govern the proliferation and	0.000	7.171	5.615	0.000	5.615

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
removal of marine foulers attached to naval assets, as well as the development of durable surface treatments that resist or easily release foulers. ***FY 2026 Plans:*** - Continue foundational research that provides the underpinnings for robust systems and platforms, exploring and understanding phenomenology of structural properties as functions of with the aim to improve performance and predict and mitigate component degradation, captured in quantitative data and physics-driven models that utilize an Integrated Computational Materials Engineering (ICME) approach and support machine learning. Research domains include Basic Materials Research, Structural Metals, Polymer Composite Materials, Propulsion Materials, Sensors & NDE Prognostics, and Alternative Hull Materials & Structures. - Continue research effort in the physics and chemistry of extreme material behavior. - Continue research effort in materials for new sensor modalities. - Continue material development for multifunctional capabilities such as energy storage systems that are structural, or coatings that both protect a substrate and harvest energy, function as a sensor or limit platform signatures. ***FY 2027 Base Plans:*** - Complete foundational research that provides the underpinnings for robust systems and platforms, exploring and understanding phenomenology of structural properties as functions of with the aim to improve performance and predict and mitigate component degradation, captured in quantitative data and physics-driven models that utilize an Integrated Computational Materials Engineering (ICME) approach and support machine learning. Research domains include Basic Materials Research, Structural Metals, Polymer Composite Materials, Propulsion Materials, Sensors & NDE Prognostics, and Alternative Hull Materials & Structures. - Complete research effort in the physics and chemistry of extreme material behavior. - Complete research effort in materials for new sensor modalities. - Complete material development for multifunctional capabilities such as energy storage systems that are structural, or coatings that both protect a substrate and harvest energy, function as a sensor or limit platform signatures. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research in the physics and chemistry of extreme material behavior, materials for new sensor modalities, and material development for multifunctional capabilities					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
such as energy storage systems that are structural, or coatings that both protect a substrate and harvest energy, function as a sensor or limit platform signatures.					
Title: Expeditionary Electromagnetic Spectrum ***Description:*** Electromagnetic Spectrum addresses the fundamental basic research and phenomenological studies to research fundamentally new electronic sensors, electronic warfare, and alternate positioning, navigation, and timing to understand, shape, and operate in the future operating environment. ***FY 2026 Plans:*** - Complete research of ultra-low size, weight, and power communications in a contested environment. (Expeditionary Warfare) - Complete research and development into physical and quantum limitations of photon detection to enhance understanding of light-matter interactions, beam control, and detection. (Expeditionary Warfare) - Complete efforts to develop a comprehensive United Stated Marine Corps (USMC) science, technology, engineering and mathematics plan that effectively supports both Junior Reserve Officer Training Corps cadets and recent USMC veterans in their transition to and growth within science, technology, engineering and mathematics fields, a structured approach. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.	0.000	1.848	0.000	0.000	0.000
Title: Expeditionary Electronics ***Description:*** Electronics addresses the fundamental basic research and phenomenological studies to support new science to enable fundamentally new electronic components, including electro-optic and quantum components, that provide superior performance, affordability, reliability and capability of current for future electronic-enabled systems in the future operating environment. ***FY 2026 Plans:***	0.000	1.088	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Complete research into understanding the fundamental limit of infrared detection beyond the electron-photon interactions of photoelectric and thermal photon-based detections. (Expeditionary Warfare) -Complete research into ultra-wide bandgap power electronics for ultrahigh frequency and medium voltage operation in extreme environments. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.					
Title: Expeditionary Materials ***Description:*** Addresses the fundamental basic research for materials science utilizing new theories, mathematical and computational models, and developing the fundamental understanding between the structure material the processing methods to make the material, and the resulting material properties to support future tailored material for all domain operations. ***FY 2026 Plans:*** - Complete research into developing a multi-physics understanding of multiferroic materials to enable future new expeditionary applications. (Expeditionary Warfare) - Complete research into quantum couplings to control phonon relaxation or transport processes in a material system. (Expeditionary Warfare) - Complete research on enhancing/optimizing the magnetoelectric coupling efficiency among electric, magnetic, mechanical, and optical (properties) states to explore fundamental light-matter interaction in heterostructured multiferroic materials. (Expeditionary Warfare) - Complete the effort in Materials Control through Quantum Coupling for Enhanced Sensing and Transduction. (Expeditionary Warfare) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	0.000	1.861	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.					
Title: Materials and Chemistry	0.000	35.564	45.068	0.000	45.068
FY 2026 Plans: - Continue work into Corrosion and Interfacial Chemistry. Efforts in this area of research target an understanding of corrosion and interfacial chemistries/processes to develop new materials technologies and control measures to ensure Fleet readiness, critical operations, and survivability. - Continue efforts into Materials Chemistry and Diagnostics. The focus of these efforts are on the chemical synthesis, structure/property relationships and processing of inorganic, organic, organometallic, biochemical, polymeric, ceramic and nanoparticle materials. Synthesis and advanced processing efforts address Materials for Extreme Environments - polymer and ceramic matrix composites, thermal protection, camouflage, obscurants, directed energy protection, especially for hypersonic applications; Soft Materials - functional and bio-inspired polymers, catalytic polymers, fire suppressant molecules, soft robotics, self-reporting materials, smart materials. - Continue efforts into Materials Processes and Performance. Efforts focus on the discovery and advancement of new and improved structural and functional high performance materials including advances and discovery of new fabrication methods associated understanding of these methods for the consistent production of these new materials. - Continue in Materials for Advanced Sensor Science. Research in this area focuses on the physical properties of materials for the discovery of new functionality with direct application to sensing and advanced electronic devices. The work performed in this area utilizes novel experimental methods, as well as theoretical and computational models to identify and understand materials behavior spanning the range of physical properties of materials including electronic, magnetic, optical, and quantum behaviors. A primary technical objective is to identify new functional materials or new methods to control the functionality of materials to enhance current or enable new sensing capabilities. Evaluation of properties is performed across scales and conditions pertinent to naval applications. Specific areas of research include investigations into enhancing performance of sensing					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
materials through engineering properties of 2D heterostructures, control of optoelectronics properties of halide perovskites, and ferroelectric materials to enable revolutionary advances in sonar device sensitivity. - Continue Materials Modeling, Simulation and Analytics. This research focuses on use of computational methodologies and manipulation of data to discover, identify, and interpret new and innovative insights into material performance and processing methodologies. Efforts aim to investigate the behavior of materials, materials synthesis, processing and characterization, modification of surfaces and plasma processing and engineered materials. Specific areas of research include first principle understanding of material response, advanced modeling and simulation techniques which can address performance of a variety of material systems, design tools for active materials for sensors and actuators, and advances in the algorithmic processes for rapid trace explosives detection. - Continue work into Biologically Enabled Materials. Here, the fundamental properties of the materials are investigated to provide the basis for sensing and actuation approaches, bioelectronics, organizational and structural mechanisms, and protective strategies, driving the underlying concepts and modeling necessary to the application of these novel products to Navy relevant systems and environments. Novel, new, and emerging biomaterials have been touted as the heart of regenerative medicine and the fabric of the medical devices market; however, bio, bioinspired, and bioderived materials offer a wider spectrum of applications than this attention would tend to indicate. From thermal and corrosion protection to waveguide technologies, attributable formulations, and energy transfer, these materials offer novel capabilities that can be harnessed to meet Navy needs. Realization of these applications requires a fundamental understanding of how the materials function and how that function can be adapted to non-native environments and use scenarios. - Continue both exploratory and confirmatory research with future naval application in Materials/Electronics research areas (realigned from Project 1099). ***FY 2027 Base Plans:*** - Continue work into Corrosion and Interfacial Chemistry. Efforts in this area of research target an understanding of corrosion and interfacial chemistries/processes to develop new materials technologies and control measures to ensure Fleet readiness, critical operations, and survivability. - Continue efforts into Materials Chemistry and Diagnostics. The focus of these efforts are on the chemical synthesis, structure/property relationships and processing of inorganic, organic, organometallic, biochemical, polymeric, ceramic and nanoparticle materials. Synthesis and advanced processing efforts address Materials for					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Extreme Environments - polymer and ceramic matrix composites, thermal protection, camouflage, obscurants, directed energy protection, especially for hypersonic applications; Soft Materials - functional and bio-inspired polymers, catalytic polymers, fire suppressant molecules, soft robotics, self-reporting materials, smart materials. - Continue efforts into Materials Processes and Performance. Efforts focus on the discovery and advancement of new and improved structural and functional high performance materials including advances and discovery of new fabrication methods associated understanding of these methods for the consistent production of these new materials. - Continue in Materials for Advanced Sensor Science. Research in this area focuses on the physical properties of materials for the discovery of new functionality with direct application to sensing and advanced electronic devices. The work performed in this area utilizes novel experimental methods, as well as theoretical and computational models to identify and understand materials behavior spanning the range of physical properties of materials including electronic, magnetic, optical, and quantum behaviors. A primary technical objective is to identify new functional materials or new methods to control the functionality of materials to enhance current or enable new sensing capabilities. Evaluation of properties is performed across scales and conditions pertinent to naval applications. Specific areas of research include investigations into enhancing performance of sensing materials through engineering properties of 2D heterostructures, control of optoelectronics properties of halide perovkites, and ferroelectric materials to enable revolutionary advances in sonar device sensitivity. - Continue Materials Modeling, Simulation and Analytics. This research focuses on use of computational methodologies and manipulation of data to discover, identify, and interpret new and innovative insights into material performance and processing methodologies. Efforts aim to investigate the behavior of materials, materials synthesis, processing and characterization, modification of surfaces and plasma processing and engineered materials. Specific areas of research include first principle understanding of material response, advanced modeling and simulation techniques which can address performance of a variety of material systems, design tools for active materials for sensors and actuators, and advances in the algorithmic processes for rapid trace explosives detection. - Continue work into Biologically Enabled Materials. Here, the fundamental properties of the materials are investigated to provide the basis for sensing and actuation approaches, bioelectronics, organizational and structural mechanisms, and protective strategies, driving the underlying concepts and modeling necessary to the application of these novel products to Navy relevant systems and environments. Novel, new, and emerging biomaterials have been touted as the heart of regenerative medicine and the fabric of the medical devices					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
market; however, bio, bioinspired, and bioderived materials offer a wider spectrum of applications than this attention would tend to indicate. From thermal and corrosion protection to waveguide technologies, attributable formulations, and energy transfer, these materials offer novel capabilities that can be harnessed to meet Navy needs. Realization of these applications requires a fundamental understanding of how the materials function and how that function can be adapted to non-native environments and use scenarios. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Increase in funding from FY2026 to FY2027 is due to increased research in various areas, including Biologically Enabled Materials, Materials Modeling, Simulation and Analytics, Materials for Advanced Sensor Science, Materials Processes and Performance, Materials Chemistry and Diagnostics, and Corrosion and Interfacial Chemistry.					
Title: Electronics Materials and Processes ***FY 2026 Plans:*** - Continue research investigations of electronic materials essential to the sensors, electronics, and electronic warfare systems needed for future US naval dominance. - Continue theoretical, numerical, and experimental research in Power Electronics Science to create an improved understanding and realization of power electronic materials, device physics, and methods and techniques. This effort will inform power electronic devices and components regarding applicability for power conversion, power distribution, and protection with reduced Size, Weight and Power (SWaP) and improve performance of military systems. - Continue research efforts regarding the invention and understanding of new phenomena, concepts and materials for the creation, transmission, modulation and detection of electromagnetic waves throughout the ultraviolet, visible and infrared spectral regions in Optical Sciences. - Continue research into Plasma Science to provide revolutionary advances in the fundamental understanding of the underlying physical processes necessary to control the interaction of electromagnetic energy and charged particles. These efforts are applicable to a variety of applications, including sensors, communications, novel compact accelerators, and materials processing, and improve the Navy's ability to operate in a range of extreme environments and conditions.	0.000	42.146	37.860	0.000	37.860

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into Electric Weapons Science regarding the development of a next-generation of electric weapons. Research efforts will include, but are not limited to, high-power lasers, microwaves, directed energy systems and electromagnetic launchers. - Continue research of Electronic, Magnetic and Optical Materials. Research investigations include the exploration of novel experimental methods, as well as theoretical and computational models to elucidate materials behavior spanning the range of physical properties of materials including electronic, magnetic, optical, thermal, mechanical, and quantum behaviors. - Continue research in Electric Sciences to perform basic theoretical, numerical, and experimental research to develop an improved understanding and realization of electronic devices with potential applicability to computation, radar, electronic warfare, communications, navigation, and sensing systems. - Continue research efforts to create new knowledge and understanding and explore new concepts, components, techniques and methods, for the design, growth, and characterization of electronic, electromagnetic, quantum phenomenology, and electro-optical materials, fabrication processes, electronic and electro-optic components, including novel electromagnetic concepts and techniques, and plasma phenomena and theory. - Continue basic research in Quantum Information Science regarding experimental and theoretical research to harness the properties of quantum superposition, entanglement and non-classical correlation for Navy applications in sensing, secure communications and networking, and information processing. - Initiate research into Electric Materials - which aims to discover and investigate electronic materials essential to the sensors, electronics, and electronic warfare systems needed for future US naval dominance. Because electronic materials are the primary building block of all electronic devices, this encompasses a wide variety of growth techniques of semiconductors, superconductors, and insulators. These techniques include molecular beam epitaxy, metal organic chemical vapor deposition, plasma-enhanced atomic layer deposition, vapor phase epitaxy, and patterned electron beam deposition. In addition, the transfer and placement of atomically thin monolayer films with widely different bandgaps, lattice constants, and crystal orientations grown by the above techniques will allow the creation of entirely new classes of materials with uniquely tailored properties. Such "materials by design" will be engineered to enhance specific properties needed for future electronic devices. In parallel with the above approaches, advanced materials processing techniques will be created					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and investigated to allow the fabrication of these envisioned devices. These efforts will require nanometer-scale fabrication techniques approaching atomic level control of both the constituent electronic materials and their interfaces. These fabrication techniques include electron beam and focused ion beam lithography as well as atomic force microscope nanometer-scale patterning and hyperthermal ion implantation, the latter two techniques pioneered at NRL. This two-pronged parallel approach will involve both experimental, theoretical, and numerical simulation efforts aimed at producing the electronic structures needed for future sensors, electronics, and electronic warfare. The ultimate goal of these efforts will enable the creation of the electronic components of integrated naval systems forming the core of detection and countering of threats to the fleet and the targeting of counterforce operations against these threats.					
FY 2027 Base Plans: - Continue research investigations of electronic materials essential to the sensors, electronics, and electronic warfare systems needed for future US naval dominance. - Continue theoretical, numerical, and experimental research in Power Electronics Science to create an improved understanding and realization of power electronic materials, device physics, and methods and techniques. This effort will inform power electronic devices and components regarding applicability for power conversion, power distribution, and protection with reduced Size, Weight and Power (SWaP) and improve performance of military systems. - Continue research efforts regarding the invention and understanding of new phenomena, concepts and materials for the creation, transmission, modulation and detection of electromagnetic waves throughout the ultraviolet, visible and infrared spectral regions in Optical Sciences. - Continue research into Plasma Science to provide revolutionary advances in the fundamental understanding of the underlying physical processes necessary to control the interaction of electromagnetic energy and charged particles. These efforts are applicable to a variety of applications, including sensors, communications, novel compact accelerators, and materials processing, and improve the Navy's ability to operate in a range of extreme environments and conditions. - Continue research into Electric Weapons Science regarding the development of a next-generation of electric weapons. Research efforts will include, but are not limited to, high-power lasers, microwaves, directed energy systems and electromagnetic launchers.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research of Electronic, Magnetic and Optical Materials. Research investigations include the exploration of novel experimental methods, as well as theoretical and computational models to elucidate materials behavior spanning the range of physical properties of materials including electronic, magnetic, optical, thermal, mechanical, and quantum behaviors. - Continue research in Electric Sciences to perform basic theoretical, numerical, and experimental research to develop an improved understanding and realization of electronic devices with potential applicability to computation, radar, electronic warfare, communications, navigation, and sensing systems. - Continue research efforts to create new knowledge and understanding and explore new concepts, components, techniques and methods, for the design, growth, and characterization of electronic, electromagnetic, quantum phenomenology, and electro-optical materials, fabrication processes, electronic and electro-optic components, including novel electromagnetic concepts and techniques, and plasma phenomena and theory. - Continue basic research in Quantum Information Science regarding experimental and theoretical research to harness the properties of quantum superposition, entanglement and non-classical correlation for Navy applications in sensing, secure communications and networking, and information processing. - Continue research into Electric Materials - which aims to discover and investigate electronic materials essential to the sensors, electronics, and electronic warfare systems needed for future US naval dominance. Because electronic materials are the primary building block of all electronic devices, this encompasses a wide variety of growth techniques of semiconductors, superconductors, and insulators. These techniques include molecular beam epitaxy, metal organic chemical vapor deposition, plasma-enhanced atomic layer deposition, vapor phase epitaxy, and patterned electron beam deposition. In addition, the transfer and placement of atomically thin monolayer films with widely different bandgaps, lattice constants, and crystal orientations grown by the above techniques will allow the creation of entirely new classes of materials with uniquely tailored properties. Such "materials by design" will be engineered to enhance specific properties needed for future electronic devices. In parallel with the above approaches, advanced materials processing techniques will be created and investigated to allow the fabrication of these envisioned devices. These efforts will require nanometer-scale fabrication techniques approaching atomic level control of both the constituent electronic materials and their interfaces. These fabrication techniques include electron beam and focused ion beam lithography as well as atomic force microscope nanometer-scale patterning and hyperthermal ion implantation, the latter two techniques pioneered at NRL. This two-pronged parallel approach will involve both experimental, theoretical, and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
numerical simulation efforts aimed at producing the electronic structures needed for future sensors, electronics, and electronic warfare. The ultimate goal of these efforts will enable the creation of the electronic components of integrated naval systems forming the core of detection and countering of threats to the fleet and the targeting of counterforce operations against these threats. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research into Electric Materials, Quantum Information Science regarding experimental and theoretical research, and Electronic, Magnetic and Optical Materials.					
Accomplishments/Planned Programs Subtotals	0.000	114.753	109.579	0.000	109.579

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1507 / *Naval Aerospace*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1507: *Naval Aerospace*	0.000	0.000	25.535	18.177	-	18.177	18.666	20.071	19.369	18.775	Continuing	Continuing

Note

Investments in Project 1507 Naval Aerospace were previously funded in this same PE 0601153N under Project 1385 Aerospace Sciences and Project 1400 Power & Energy. Funding was realigned to the current Project to promote greater transparency and execution oversight for Basic Research investments in aerospace sciences in the Department of the Navy's annual budget request.

All Expeditionary Investments in Project 1507 Naval Aerospace have been realigned in this same PE 0601153N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and naval priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Naval Aerospace activity develops technologies for the science and engineering of flight from the land and sea surfaces to the edge of the atmosphere, and as applicable to the utilization of flight for aircraft, missiles, rockets, munitions, and unmanned systems (UxS) employed by the Navy and Marine Corps forces operating from naval platforms or land locations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Aerodynamics	0.000	3.724	3.725	0.000	3.725
FY 2026 Plans: Aerodynamics Research efforts focused on enhancing our understanding of Naval-unique aerodynamic challenges by developing advanced computational and experimental methods. Research efforts include the following: Continue: - Researching the fully coupled aerodynamic interface between ships and aircraft. - Investigating novel state-of-the-art in-situ diagnostics and reduced-order modeling of complex flow fields. - Researching innovative technologies enabling increased range and/or maneuverability suitable for aircraft operating from the maritime environment and attritable systems such as unmanned aerial systems and high-speed weapons. - Research of the interactional and transitional aerodynamics of multi-rotor systems in complex fluid dynamic environments involving multi-body relative motion. - Research into effects of dynamic ground effect on lifting body aerodynamics, including coupling to active flow control schemes. - Investigation of novel active flow control schemes via innovative surface materials.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Understanding bluff body fluid dynamics and the effects of co-flow on wake evolution. ***FY 2027 Base Plans:*** Continue: - Researching the fully coupled aerodynamic interface between ships and aircraft. - Investigating novel state-of-the-art in-situ diagnostics and reduced-order modeling of complex flow fields. - Researching innovative technologies enabling increased range and/or maneuverability suitable for aircraft operating from the maritime environment and attritable systems such as unmanned aerial systems and high-speed weapons. - Research of the interactional and transitional aerodynamics of multi-rotor systems in complex fluid dynamic environments involving multi-body relative motion. - Research into effects of dynamic ground effect on lifting body aerodynamics, including coupling to active flow control schemes. - Investigation of novel active flow control schemes via innovative surface materials. - Understanding bluff body fluid dynamics and the effects of co-flow on wake evolution. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change between FY 2026 and FY 2027.					
Title: Flight Dynamics & Controls ***FY 2026 Plans:*** Flight Dynamics & Control Research to advance fundamental knowledge of the phenomena that drive air vehicle dynamics in the marine environment. Multi-disciplinary research efforts in this area enable greater operability in adverse conditions, higher precision flight control, agile multi-agent control, and greater human/machine performance. Research efforts include the following: Initiate: - Competitive control law synthesis based on plant models for unconventional UAS operating from sea-based and expeditionary platforms. - Optimal control and sensing for distributed human/machine systems to exploit recent physiological research on human sensory and state estimation mechanisms and optimal trajectory planning - Data-based adaptive optimal control for uncertain systems with unmodelled dynamics Continue:	0.000	4.160	6.949	0.000	6.949

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Control synthesis to enable agile and guaranteed performance of non-linear systems with coupled control axes. - Fundamental interactions between cyber, physical and physiological dynamics in coupled human/machine systems - Robust and precise control in the presence of highly turbulent flow fields - Multibody control systems and the ability to demonstrate guaranteed performance relative to a desired end-state - Research efforts into Computational Physics and Fluid Dynamics. The goal of this research is to develop state-of-the-art computational physics and data-driven algorithms, numerical models, and related high-performance computing capabilities that solve fundamental science and engineering roadblock problems, and to extend these capabilities systematically to leverage emerging computational architectures and physical models. Complete: - Software algorithms that enable precise ship-relative navigation in GPS-denied environments.					
FY 2027 Base Plans: Continue: - Control synthesis to enable agile and guaranteed performance of non-linear systems with coupled control axes. - Fundamental interactions between cyber, physical and physiological dynamics in coupled human/machine systems - Robust and precise control in the presence of highly turbulent flow fields - Multibody control systems and the ability to demonstrate guaranteed performance relative to a desired end-state - Competitive control law synthesis based on plant models for unconventional UAS operating from sea-based and expeditionary platforms. - Optimal control and sensing for distributed human/machine systems to exploit recent physiological research on human sensory and state estimation mechanisms and optimal trajectory planning - Data-based adaptive optimal control for uncertain systems with unmodelled dynamics - Research efforts into Computational Physics and Fluid Dynamics. The goal of this research is to develop state-of-the-art computational physics and data-driven algorithms, numerical models, and related high-performance computing capabilities that solve fundamental science and engineering roadblock problems, and to extend these capabilities systematically to leverage emerging computational architectures and physical models.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to more efforts being funded to advance the state of the art in modeling and simulation science within the realm of computational physics and fluid dynamics.					
Title: Science of Autonomy	0.000	8.686	0.210	0.000	0.210
FY 2026 Plans: Science of Autonomy and Control of Unmanned Systems Research investigations regarding critical multidisciplinary autonomy challenges that cut across areas/domains, including air, sea, undersea and ground. Research efforts include the following: Continue: - Investigating the scalable and robust distributed collaboration among autonomous systems. - Research on human/unmanned system collaboration. - Work on perception-based adaptation across uncertain naval environments. - Investigating embodied and situated intelligence and architectures. - Developing theory-based tools and methods for safe, assured, robust, verifiable, and trustable autonomy Continue both exploratory and confirmatory research with future naval application in the following research areas (realigned from project unit 1099): - Sea-based Aviation - Air Vehicle Sustainment - Collaborative Autonomy					
FY 2027 Base Plans: Continue both exploratory and confirmatory research with future naval application in the following research areas: - Sea-based Aviation - Air Vehicle Sustainment - Collaborative Autonomy					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease in funding from FY 2026 to FY 2027 is due to the realignment of funding under PE 0601153N from Proj 1507 (Naval Aerospace) to Proj 1501 (Autonomy/AI) within this PE. Planned programs have been updated to align to current focus area.					
Title: Aerospace Structures and Materials	0.000	3.872	3.900	0.000	3.900
FY 2026 Plans: Aerospace Structures and Materials Research is focused on basic research for developing lightweight, reliable, survivable, sustainable, and affordable airframes for naval and marine corps aircraft and weapons. Continue: - Research on galvanic corrosion and mitigation strategies for airframes in naval environment. - Research on short fiber-thermoplastic composite forming and joining. - Investigating lightweight material solutions for multifunctional structures for airframes and weapons. - Research of non-traditional layups and curing methods - Research of Metallic alloys - MPEA's / CS-AFSD optimized compositions - Research on new polymeric M&P, thermoplastic and alternative resin - Processing methods and chemistries for novel M&P technologies Complete: - Efforts on multiaxial loading, environmental degradation and damage of hybrid airframes. - Work on novel out of autoclave and out of oven curing technologies. - Work on high strain rate characterization of materials Initiate: - Research on electro-thermal conductivity, surface ground plane behaviors, and E^3 effects - Research on durability and degradation of transparencies and optical coatings - Research on novel materials and processes for low cost / limited use					
FY 2027 Base Plans: Aerospace Structures and Materials Research is focused on basic research for developing lightweight, reliable, survivable, sustainable, and affordable airframes for naval and marine corps aircraft and weapons. Continue: - Research on short fiber-thermoplastic composite forming and joining. - Investigating lightweight material solutions for multifunctional structures for airframes and weapons.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research of non-traditional layups and curing methods - Research of Metallic alloys - MPEA's / CS-AFSD optimized compositions - Processing methods and chemistries for novel M&P technologies - Research on electro-thermal conductivity, surface ground plane behaviors, and E^3 effects - Research on durability and degradation of transparencies and optical coatings - Research on novel materials and processes for low cost / limited use Complete: - Research on galvanic corrosion and mitigation strategies for airframes in naval environment. - Research on new polymeric M&P, thermoplastic and alternative resin Initiate: - Research on environmentally assisted cracking of 7085 aluminum - Research on materials to repair or mitigate damage to Ultra-High Strength Steels - Research on AI/ML algorithms for NDI data analysis ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change between FY 2026 and FY 2027.					
Title: Expeditionary Aerospace Sciences	0.000	2.033	0.000	0.000	0.000
Description: Supports fundamental basic research and phenomenological studies related to the science of flight from the land and sea surfaces to the edge of the atmosphere to enable fundamentally new future new applications for of flight for aircraft, missiles, rockets, munitions, and unmanned systems employed by the Navy and Marine Corps forces in the future operating environment. ***FY 2026 Plans:*** - Complete research into mitigation of unsteady surface impacts on lifting bodies operating in-ground effect. (Expeditionary Warfare) - Complete study of theoretical foundations and limitations of deception and Artificial Intelligence methods in perception/action loops. (Expeditionary Warfare) ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all Expeditionary funding under PE 0601153N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs have been updated to align to current expeditionary and marine corps priorities.					
Title: Aerospace Propulsion, Power and Thermal Management ***FY 2026 Plans:*** Research efforts with focus on advancing critical technologies relating to advanced propulsion cycles, propulsion and power subsystems, engine-airframe integration, turbomachinery aerodynamics/aeromechanics, drive systems, high-temperature materials, and protective coatings. Research efforts include the following: Initiate: - Experimental Study and CFD Analysis of Fuel Cavitation - Research on Reactive Mixing and Droplet Breakup in Liquid-Fueled Detonations - Research on Group Dynamics of Reacting Jets in Crossflow - Research on Variable Cycle Technologies Continue: - Synergistic Effects in the Environmental Degradation of Ceramic Coatings in Gas-Turbine Engines and its Mitigation - Advanced Subgrid-Scale Models for Particle Transport and Deposition in Gas Turbines - Advancing Prediction Methods for Complex Curvature Nozzle Flows Relevant to Next-Generation Naval Propulsion - Hierarchical Nonlinear Control of Integrated Propulsion, Power, and Thermal Management Systems for Naval Aircraft - Inter-Turbine burning for enhanced performance. - Enhancing Jet Breakup via High-Frequency Ultrasound - Research on: - Advancing the technical superiority of Naval Aircraft - Propulsion, Power, and Thermal management with emphasis on advanced propulsion cycles, propulsion and power subsystems, engine-airframe integration, turbomachinery aerodynamics/aeromechanics, drive systems, high temperature materials and protective coatings.	0.000	3.060	3.393	0.000	3.393

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Improving the power density, fuel efficiency, speed, range, and operating reliability of future large, medium, and small engines. - Rotating Detonation Engines and plasma assisted combustion, their benefits, and their integration into weapon systems using thermodynamic models, Computational Fluid Dynamics, and sub-scale experiments. - High stage-loading and efficient turbomachinery including distortion tolerant fans, casing treatments and advanced methods in blade-disk aerodynamics. - Advanced cooling and thermal management for engines and auxiliary systems including new concepts of heat collection, distribution, and rejection; advanced turbine engine materials and coatings. - Highly integrated propulsion inlets and exhausts and dust ingestion research, including modeling, separating, deposition, coatings, and sensing. - Improving jet engine material durability and temperature rate capabilities in both benign and corrosive environments. - Advanced sensors to provide ingestion and foreign object damage sensing, as well as overall prognostics. - Fundamental modeling of distributed combustion in the turbine, and novel jet breakup concepts.					
FY 2027 Base Plans: Initiate: - Research on radiative and convective heat transfer in detonation-based combustion environments - Research on lightweight and resilient materials, coatings, and surface treatments suitable for Naval environment - Research on methods to better characterize and reduce inlet distortion - Research to characterize and simulate sand erosion and deposition in gas turbine components Continue: Research on: - Advancing the technical superiority of Naval Aircraft - Propulsion, Power, and Thermal management with emphasis on advanced propulsion cycles, propulsion and power subsystems, engine-airframe integration, turbomachinery aerodynamics/ aeromechanics, drive systems, high temperature materials and protective coatings. - Improving the power density, fuel efficiency, speed, range, and operating reliability of future large, medium, and small engines. - Rotating Detonation Engines and plasma assisted combustion, their benefits, and their integration into weapon systems using thermodynamic models, Computational Fluid Dynamics, and sub-scale experiments. - High stage-loading and efficient turbomachinery including distortion tolerant fans, casing treatments and advanced methods in blade-disk aerodynamics.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Advanced cooling and thermal management for engines and auxiliary systems including new concepts of heat collection, distribution, and rejection; advanced turbine engine materials and coatings. - Highly integrated propulsion inlets and exhausts and dust ingestion research, including modeling, separating, deposition, coatings, and sensing. - Improving jet engine material durability and temperature rate capabilities in both benign and corrosive environments. - Advanced sensors to provide ingestion and foreign object damage sensing, as well as overall prognostics. - Fundamental modeling of distributed combustion in the turbine, and novel jet breakup concepts. Complete: - Research on Variable Cycle Technologies - Research on Reactive Mixing and Droplet Breakup in Liquid-Fueled Detonations- Experimental Study and CFD Analysis of Fuel Cavitation. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in radiative and convective heat transfer in detonation-based combustion environments, lightweight and resilient materials, coatings, and surface treatments suitable for Naval environment, methods to better characterize and reduce inlet distortion, and research to characterize and simulate sand erosion and deposition in gas turbine components.					
Accomplishments/Planned Programs Subtotals	0.000	25.535	18.177	0.000	18.177

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1508 / *Undersea Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1508: *Undersea Systems*	0.000	0.000	6.916	4.265	-	4.265	4.242	4.467	4.487	4.564	Continuing	Continuing

Note

Investments in Project 1508 Undersea Systems were previously funded in this same PE 0601153N in Project 1401 Undersea Systems Payloads and Weapons. This Project was created to promote greater transparency and execution oversight for basic research investments in undersea systems payloads and weapons research in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

This Focus Area (FA) addresses innovative affordable, persistent, and stealthy undersea systems that leverage the asymmetric US Navy advantage afforded by subsurface operations

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Undersea Systems	0.000	6.916	4.265	0.000	4.265
FY 2026 Plans: - Continue research investigations of Undersea Warheads with respect to the characterization and modeling of explosive formulations. - Continue research efforts regarding Advanced Concepts for Sea Warfare and Weapons regarding unconventional power and energy technologies. - Continue research investigations of Cooperative Autonomous Swarm Technology. - Continue both exploratory and confirmatory research with future naval application in Undersea Systems research areas (realigned from Project 1099).					
FY 2027 Base Plans: - Complete research efforts regarding Advanced Concepts for Sea Warfare and Weapons regarding unconventional power and energy technologies. - Continue research investigations of Undersea Warheads with respect to the characterization and modeling of explosive formulations. - Continue research investigations of Cooperative Autonomous Swarm Technology. - Continue both exploratory and confirmatory research with future naval application in Undersea Systems research areas.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to closer align to current naval and administrative priorities by reducing research across multiple topics including advanced concepts for sea warfare and weapons, undersea warheads, and cooperative autonomous swarm technology.					
Accomplishments/Planned Programs Subtotals	0.000	6.916	4.265	0.000	4.265

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 1510 / *Expeditionary Campaign*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1510: *Expeditionary Campaign*	0.000	0.000	0.000	20.754	-	20.754	23.637	25.968	24.413	23.466	Continuing	Continuing

Note

Investments in Project 1510 Expeditionary Campaign were previously funded in this same PE 0601153N under Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/ Electronics and 1507 Naval Aerospace. Planned programs have been updated to align to current expeditionary priorities. This new Project was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

This project funds fundamental research that will lay the foundation for new innovative technologies and future capabilities for naval and expeditionary forces. It provides the foundation of research that enables Naval Forces to fight threats and adversaries in expeditionary operations. Research efforts include theoretical and experimental investigations directed toward increasing knowledge and understanding of the physical, chemical, engineering, environmental and life sciences. The project advances science that is needed to address a range of research challenges that result from physical and operational environmental limitations so harsh that solutions push basic discovery and invention.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Command, Control, Communications, and Computers (C4)	0.000	0.000	3.000	0.000	3.000
Description: This activity conducts fundamental research to study robust, resilient, and secure networked communications pathways and capability that support an expeditionary force's distributed and disaggregated operations. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Research of ultra-low size, weight, and power communications in a contested environment. - Research and development into physical and quantum limitations of photon detection to enhance understanding of light-matter interactions, beam control, and detection. - Research to develop a quantitative numerical representation of mesospheric Atmospheric Gravity Wave (AGW) coupling to Traveling Ionospheric Disturbances (TID) that is underpinned by the theoretical models while matching the current observationally based empirical models.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete: - Develop a comprehensive United Stated Marine Corps (USMC) science, technology, engineering and mathematics plan that effectively supports both Junior Reserve Officer Training Corps cadets and recent USMC veterans in their transition to and growth within science, technology, engineering and mathematics fields, a structured approach. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Force Protection ***Description:*** This activity addresses the fundamental basic research to study new ways and means to protect forces and materiel across all domain threats in all operational settings, from contested maritime, air, and land domains, to include complex urban environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Basic research to conduct phenomenological studies involving the interaction of directed energy with matter. - Basic research efforts to study the fundamental phenomenology of explosive signatures and threat system components. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and	0.000	0.000	1.500	0.000	1.500

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Human Performance, Training and Education	0.000	0.000	4.783	0.000	4.783
Description: This activity addresses the fundamental basic research to support new science advancements that enhance cognitive and physical performance, and augment warfighter-machine teaming for greater operational effectiveness in the future operating environment. The activity also addresses the fundamental basic research and phenomenological studies into the science of health, survivability, and recovery of naval expeditionary forces operating in austere, distributed, and isolated maritime environments and to enable fundamentally new biomedical applications in the future operating environment.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: Initiate: - Research investigations regarding learning theories to enable complex, collaborative, human-machine interactions. - Research efforts on means and methods for evaluating the reliability and effectiveness of collective decision making by autonomous systems and humans. - Work in immersive sciences to generate 3D objects via photogrammetry and generative artificial intelligence techniques, and to conduct research studies to optimize user interfaces and information displays to increase understanding and use of Extended Reality (XR) technologies for naval applications. - Fundamental research towards autonomous casualty care for severe trauma in austere conditions with the intent to gain the understanding needed to extend the survivability window for acute traumatic injuries significantly beyond the 'golden hour'.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
& Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Intelligence, Surveillance, And Reconnaissance (ISR) ***Description:*** This activity conducts fundamental research to study enhanced situational awareness, persistent surveillance, and tactical decision making through automated analysis of data and rapid integration of information and acquired knowledge. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Study of theoretical foundations and limitations of deception and Artificial Intelligence methods in perception/ action loops. - Research effort to lay the theoretical and methodological foundations for detecting threats using social media data. - Research to understand the influence of mis/dis/mal information in social media. - Research effort to understand how hate and a potential for violence or protest present themselves at a community level. - Research investigations regarding the creation of Artificial Intelligence (AI) hybrid learning theories for the purpose of creating heterogeneous multi-agent collaborative autonomy. - Research to create theories for multi-agent collaborative autonomy that mimic the organizational principles found in social insects/birds/fishes. - Follow-on and focused research effort for the machine learning investigation of multifactorial information environment parameters in order to automate the process of detecting, identifying and distinguishing intent. - Research to study novel collaborative methods for swarming autonomous entities to reliably determine true/ relative position in GPS-denied operations. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and	0.000	0.000	2.454	0.000	2.454

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Logistics	0.000	0.000	5.100	0.000	5.100
Description: This activity addresses the fundamental basic research to study the the deployment, sustainment, reconstitution, and re-deployment of forces engaged in expeditionary operations. It supports phenomenological studies to enable fundamentally new power and energy advancement for new naval applications in the future operating environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Research into understanding the innate multi-physics of multiferroic materials to enable future new expeditionary applications. - Research into understanding the fundamental limit of infrared detection beyond the electron-photon interactions of photoelectric and thermal photon-based detections. - Research into ultra-wide bandgap power electronics for ultrahigh frequency and medium voltage operation in extreme environments. - Research into developing a multi-physics understanding of multiferroic materials to enable future new expeditionary applications. - Research into quantum couplings to control phonon relaxation or transport processes in a material system. - Research on enhancing/optimizing the magnetoelectric coupling efficiency among electric, magnetic, mechanical, and optical (properties) states to explore fundamental light-matter interaction in heterostructured multiferroic materials. - Research effort in Materials Control through Quantum Coupling for Enhanced Sensing and Transduction. - Efforts to study the complex energy-supply problem with deployed vehicles in contested environments en-route to developing a novel decision-support framework for planning and managing adaptive transportation systems for naval logistics. - Research into mitigation of unsteady surface impacts on lifting bodies operating in-ground effect. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionarys priorities.					
Title: Expeditionary Cyber ***Description:*** This activity addresses the fundamental basic research and phenomenological studies to exploit new science to enable future successful offensive and defensive operations in the future operating environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Research into rethinking data security in a speculative, hammerable, and heterogeneous world. - Research into third generation network intrusion detection and prevention systems. - Research into cyber-secure, power-aware, embedded, distributed, federated learning algorithms on resource constrained, sporadically connected systems. - Research into cyber-secure embedded auditable root-of-trust technologies for radio frequency-centric hardware to embed trust and assurance into expeditionary microelectronics. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace	0.000	0.000	1.500	0.000	1.500

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Maneuver ***Description:*** This activity conducts fundamental research to study new ways and means to land forces and material through contested sea-land surface interfaces to then conduct maneuver warfare. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Research to understand nearshore and littoral environmental effects on future multidomain expeditionary operations. - Research to study of littoral mud flats and shorelines by investigating interlinked processes such as soil-sea-ice-air and benthic Life Interactions. Methods and investigation should include theory, modeling, field and remote sensing/satellite based focus areas for global understanding. - Research for modeling autonomy, for the purpose of creating systems that operate in complex undersea/ surface/ land/air/space domains. - Research methods that model how diverse autonomous systems interact with each other in complex environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0601153N from planned program in Projects 1398 Ocean Atmosphere and Space Sciences, 1400 Power and Energy, 1501 Autonomy/AI, 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems, 1505 Human & Biological Systems, 1506 Materials/Electronics and 1507 Naval Aerospace into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.	0.000	0.000	2.417	0.000	2.417
Accomplishments/Planned Programs Subtotals	0.000	0.000	20.754	0.000	20.754

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 3465 / *In-House Lab Independent Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3465: *In-House Lab Independent Res*	0.000	17.401	18.549	21.031	-	21.031	21.477	22.012	22.084	22.463	Continuing	Continuing

A. Mission Description and Budget Item Justification

The In-house Laboratory Independent Research (ILIR) initiative seeks to improve the quality of defense research conducted predominantly through the Naval Warfare Centers/Laboratories. It also supports the development of technical intellect and education of engineers and scientists in disciplines critical to national defense needs through the development of new knowledge in a military laboratory environment. Initial research focus is often conducted in an unfettered environment since it is basic research, but many projects focus on applying recently developed theoretical knowledge to real world military problems with the intention of developing new capabilities and improving the performance of existing systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: In-House Laboratory Independent Research (ILIR)	17.401	18.549	21.031	0.000	21.031
Description: The In-house Laboratory Independent Research program provides opportunities to strengthen the Naval Science and Engineering workforce through basic research conducted at the Naval Warfare Centers and Laboratories. These research efforts address high risk/high payoff warfighter science and technological needs, as well as attract the next generation of researchers to consider employment within the Department of the Navy. ILIR also provides opportunities for advanced degrees, technical publications, presentations, and patents.					
FY 2026 Plans: - Continue projects selected in FY 2025 in support of the naval Science and Engineering workforce at the Naval Warfare Centers and Laboratories via high-risk / high-reward basic research initiatives with direct naval relevance to the naval mission of the Command. Each participating naval site will conduct peer reviews for on-going research projects to assess the progress/quality of the research and to help determine if research investments should continue. - Complete projects selected in FY 2024 as planned. Assess opportunities for technology transition through coordination with naval resource sponsors. Transfer successful efforts to Navy research, development, test & evaluation (RDT&E) sponsored programs. - Initiate FY 2026 research projects. Participating warfare centers / laboratories will generate new research topics with priority given to warfighter needs, technology alignment, high quality research, and recruitment / retention needs as appropriate to attract outstanding scientists and engineers to the Department of the Navy.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 3465 / *In-House Lab Independent Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Approved topics will cover a broad range of naval-relevant research areas critical to the naval missions of the participating warfare center and laboratories. ***FY 2027 Base Plans:*** - Continue projects selected in FY 2026 in support of The development of the naval Science and Engineering workforce at the Naval Warfare Centers and Laboratories via high-risk / high-reward basic research initiatives with direct naval relevance to the naval mission of the Command. Each participating naval site will conduct peer reviews for on-going research projects to assess the progress/quality of the research and to help determine if research investments should continue. - Complete projects selected in FY 2025 as planned. Assess opportunities for technology transition through coordination with naval resource sponsors. Transfer successful efforts to Navy research, development, test & evaluation (RDT&E) sponsored programs. - Initiate FY 2027 research projects. Participating warfare centers / laboratories will generate new research topics with selection decision priority being given to warfighter needs, technology alignment, high quality research, and recruitment / retention needs as appropriate to attract outstanding scientists and engineers to the Department of the Navy. Approved topics will cover a broad range of naval-relevant research areas critical to the naval missions of the participating warfare center and laboratories. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is to expand the number of scientists and engineers conducting naval-relevant research efforts at warfare centers and laboratories across the Naval Research and Development Enterprise (NR&DE). Efforts will focus on warfighter needs, technology alignment, high-quality basic research, and will provide additional opportunities for the recruitment and retention of outstanding scientists and engineers within the Navy.					
Accomplishments/Planned Programs Subtotals	17.401	18.549	21.031	0.000	21.031

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 3465 / *In-House Lab Independent Res*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 1					R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*				Project (Number/Name) 5893 / *Decision Superiority*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
5893: *Decision Superiority*	0.000	32.458	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.458

Note

Investments in Project 5893 Decision Superiority are now funded in this same PE 0601153N under Project 1501 Autonomy/AI and Project 1502 C5ISR/Naval Space.

A. Mission Description and Budget Item Justification

The Decision Superiority research area explores and develops technology for the naval force to include information processing, understanding, analysis, decision-making, and execution to obtain decisive competitive advantage across the range of naval missions and levels of warfare. Advanced communications and networking and precision navigation and timing (PNT) technology will accelerate and expand the Navy and Marine Corps ability to access high quality information for the kill web and to use information for operational effects and advantage with incredible ubiquity, accuracy, precision, security, integrity, and speed.

Basic research efforts within this research area includes:
- Communications and Networks
- Artificial Intelligence, Data Sciences, and Quantum Information Sciences
- Young Investigator Program (YIP)
- Expeditionary Decision Superiority
- Information Technology

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Communications and Networks	0.766	0.000	0.000	0.000	0.000
Description: The Communications and Networking activity conducts basic research in information-theoretic capacity and wireless communications science to enable seamless, robust connectivity and networking in hostile tactical environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Artificial Intelligence, Data Sciences, and Quantum Information Sciences	22.336	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 5893 / *Decision Superiority*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The AI, Data Sciences, and QIS activity includes basic research efforts directed toward scientific foundations and understanding of novel techniques for controlling quantum states; algorithms for analyzing massive datasets in real time and heterogeneous information integration; science base and computational methods for building versatile intelligent agents; theory, algorithms and tools for decision support; mathematical optimization for resource allocation and usage; and modeling and computation of complex physical phenomena for the unique challenges of the Naval domain. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Young Investigator Program (YIP) ***Description:*** The ONR Young Investigator Program (YIP) attracts outstanding faculty members to the Department of Navy's basic research program by identifying individuals that show exceptional promise for doing creative research and encourage their teaching and research careers through long term support. Young Investigator awards are for a period of three years. Proposals are solicited annually via a funding opportunity announcement open to tenure-track faculty in science, engineering, and mathematics. YIP awardees are competitively selected based on faculty achievements, technical proposal, benefit to the Navy and Marine Corps, and university endorsement. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.748	0.000	0.000	0.000	0.000
Title: Expeditionary Decision Superiority	0.772	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 5893 / *Decision Superiority*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: Supports the fundamental basic research and phenomenological studies into perceiving the future operational environment, processing information, and supporting decision-making to gain a future competitive advantage across the range of naval expeditionary missions. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Information Technology ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.836	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	32.458	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 1	R-1 Program Element (Number/Name) PE 0601153N / *Defense Research Sciences*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	12.066	16.411	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.477

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: High Temperature Semiconductor Focal-Plane Electro ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop High Temperature Semiconductor Focal-Plane Electro	0.000	4.827
Congressional Add: Carbon Nanotube Technology ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Carbon Nanotube Technology	0.000	5.792
Congressional Add: Remote Sensing to Monitor Arctic Sea Ice ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research Remote Sensing to Monitor Arctic Sea Ice	0.000	5.792
Congressional Add: Hypersonic workforce development ***FY 2025 Accomplishments:*** This program will create a new "Masters Program in Hypersonic Systems" that is particularly well suited for graduates of the military academies. A companion Hypersonic Systems Lab is designed to provide hands-on Test and Evaluation experience, as well as a platform for high level research. The Lab consists of a fast-valve operated Mach 6 Ludwieg Tube Wind Tunnel, a High Temperature Shock Tunnel designed for combustion research, and a multi-purpose Blow-down Mach 3 Tunnel designed to study shock-boundary layer interactions. A portion of the program will expand Lab facility capabilities and to provide a suite of state-of-the-art instrumentation. The instrumentation will include multiple high-speed cameras for visible and infrared wavelengths, high-speed digital data acquisition systems, particle seeders suitable for hypersonic PIV, and components for self-focusing Schlieren visualization, multi-beam FLDI and PLIF systems. It also includes a	3.861	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 1	**R-1 Program Element (Number/Name)** PE 0601153N / *Defense Research Sciences*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
dedicated high-quality 3-D Printer and a 3-D CNC Mill for the rapid fabrication of test articles as well as Shock Tunnel burst plates. ***FY 2026 Plans:*** N/A		
Congressional Add: Materials and structures in extreme environments ***FY 2025 Accomplishments:*** -Investigation of a novel class of architected materials and structures understand the materials ability to withstand extreme loading conditions -Development of a novel class of engineered, heterogeneous meso-scale architecture materials fabricated with a multi-metal 3D printer and capable of withstanding extreme loading conditions -Evaluation of deformation, damage and failure modeling of; (i) high-density polyethylene, (ii) ultra-high molecular weight polyethylene, and (iii) other polymers of interest under extreme loading simulating undersea conditions ***FY 2026 Plans:*** N/A	5.792	0.000
Congressional Add: Shaping metallic surfaces for thermal system management ***FY 2025 Accomplishments:*** Continue to develop equipment and techniques for large area high processing rate Femtosecond Laser Surface Processing (FLSP) needed for many Navy and DoW applications. Continue to develop techniques for removal of extreme heat fluxes that utilize FLSP surfaces for enhanced two-phase heat transfer at high pressure with dielectric fluids/refrigerants. ***FY 2026 Plans:*** N/A	2.413	0.000
Congressional Adds Subtotals	12.066	16.411

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602114N *I Power Proj Applied Research*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	24.837	39.323	38.838	-	38.838	43.758	45.619	44.561	43.864	Continuing	Continuing
0000: *Power Proj Applied Research*	0.000	24.837	30.635	38.838	-	38.838	43.758	45.619	44.561	43.864	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	8.688	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.688

A. Mission Description and Budget Item Justification

In an Artificial Intelligence (AI) enabled maritime battlespace, the ability to fight at the speed of light will determine the outcome. The effective defense against threats increasingly beyond human speed, will enable U.S. naval forces to outthink, outmaneuver and outfight adversaries. This Program Element (PE) supports both advanced technology research and near to mid-term transition opportunities. The advanced research focus is primarily on Directed Energy, High Speed Weapon Propulsion, Electro-Optic/Infrared (EO/IR) Sensor Technologies. The goal of this research is to develop technologies and capabilities that enable Directed Energy (DE) weapons as well as defense against adversary DE systems; the development of vehicle and propulsion technology for high-speed weapons operating from Mach 3 and beyond; investment in the areas of Electro Optic/Infrared devices and advanced sensors; and technologies that provide the navy of the future the ability to quickly locate, target, and strike critical targets in the maritime environment and ashore.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic Research, Applied Research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602114N *I Power Proj Applied Research*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	23.842	30.635	29.777	-	29.777
Current President's Budget	24.837	39.323	38.838	-	38.838
Total Adjustments	0.995	8.688	9.061	-	9.061
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.312			
• Congressional Rescissions	-	-			
• Congressional Adds	-	9.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.608	0.000			
• SBIR/STTR Transfer	-0.613	0.000			
• Program Adjustments	0.000	0.000	9.061	-	9.061
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Hypersonic Test Ventilation*	0.000	3.861
Congressional Add: *Operational Aviation Fuel Synthesis Demonstration*	0.000	4.827
Congressional Add Subtotals for Project: 9999	0.000	8.688
Congressional Add Totals for all Projects	0.000	8.688

Change Summary Explanation

Funding: The FY2027 request was increased by $9.061M to reflect additional funding in Joint Hypersonic Science and Technology Enhancements.

Technical: No significant change.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602114N / *Power Proj Applied Research*	Project (Number/Name) 0000 / *Power Proj Applied Research*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Power Proj Applied Research*	0.000	24.837	30.635	38.838	-	38.838	43.758	45.619	44.561	43.864	Continuing	Continuing

A. Mission Description and Budget Item Justification

In an Artificial Intelligence (AI) enabled maritime battlespace, the ability to fight at the speed of light will determine the outcome. The effective defense against threats increasingly beyond human speed, will enable U.S. naval forces to outthink, outmaneuver and outfight adversaries. This Program Element (PE) supports both advanced technology research and near to mid-term transition opportunities. The advanced research focus is primarily on Directed Energy, High Speed Weapon Propulsion, Electro-Optic/Infrared (EO/IR) Sensor Technologies, and Naval Precision Strike Decision Tools and Planning. The goal of this research is to develop technologies and capabilities that enable Directed Energy (DE) weapons as well as defense against adversary DE systems; the development of vehicle and propulsion technology for high-speed weapons operating from Mach 3 and beyond; investment in the areas of Electro Optic/Infrared devices and advanced sensors; and technologies that provide the navy of the future the ability to quickly locate, target, and strike critical targets in the maritime environment and ashore.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Directed Energy	6.055	7.129	5.643	0.000	5.643
Description: The goal of this activity is to develop technologies and capabilities that enable Directed Energy (DE) weapons for naval applications as well as defense against adversary DE systems. The advanced research focus is in Naval Ship Defense, Naval Air Defense, and Naval Precision Strike Operations. The scope of this activity includes systems, subsystems and their associated technologies. These technologies provide naval forces the ability to quickly engage critical and emerging targets, in cost effective means, while minimizing potential collateral damage, as well as the ability to defend against and counter adversarial modes of attack. ***FY 2026 Plans:*** HEL/CDEW Continue: - HEL efficiency enhancement via solid-state diode/fiber laser technologies - Atmospheric blooming, laser-maritime environment interactions understanding - Laser detection/testing sensors improvements - Novel NIR, MWIR, LWIR lasers development - Novel beam-director architectures and high energy laser optics - Counter-HEL and counter-HPM capability development Initiate:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Examine concepts in metamaterial research for Counter Directed Energy Weapons Complete: - Improved laser sensor and illuminator technologies - Improvements in fiber laser doped illuminating lasers at unique "eye-safer" wavelengths - Examination of new ceramic-metal composite nanomaterials, such as Carbon Nanotubes (CNT) for improved laser performance in solid state diode laser devices Pulsed Laser (PL) Continue: - Ultra Short Pulse Laser (USPL) propagation mechanisms/effects - USPL sub-component maturation and integration for prototype experimentation - USPL requirements analysis and functional design - USPL critical component prototyping/testing/validation - USPL precision dynamic engagements against multiple targets High Power Microwave (HPM) Continue: - Novel HPM sensors including electronic Battle Damage Indication (eBDI) - AI for HEL & HPM systems increasing maritime operational lethality - HPM use in EM Maneuver Warfare and Integrated Defense understanding - HPM effects/lethality through RF coupling, device interaction physics, time-reversal techniques for optimized threat-agnostic defeat waveforms - HPM engagement systems range testing - System/mission level performance analysis and modeling - State-of-the-Art HPM low-profile steerable antennas; high energy density capacitors, solid-state switches, power supplies, hardened controls - HPM wide-bandwidth frequency agile amplifiers - Open architecture HPM source development for effective CONEMPS - Self-contained HPM prototypes with integrated sensor/C2 capabilities for UAS swarm defense - Solid-state/vacuum electronic HPM sources for flexible cross-spectrum waveforms Electric Weapons Technology Continue:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Applied science efforts into Electric Weapons Technology for near to mid-term deployment of electric weapons including high-power lasers, microwaves, directed energy systems, and electromagnetic launchers. Research areas: optical fiber fabrication, laser media, optical coatings, ultrafast bandgap photonic materials; beam control systems for atmospheric/underwater high-power electromagnetic radiation propagation; high-power microwave sources and antenna design; high-intensity laser/microwave damage mechanisms characterization; increasing pulsed power systems and electromagnetic launcher efficiency/lifetime; decreasing Size, Weight, and Power (SWaP) while increasing robustness and automation.					
FY 2027 Base Plans: DE Lethality and Operations Analysis (OA) Initiate: - Directed energy modeling/simulation framework for operations analysis - Battle damage assessment tools via sensors and algorithms - Kinetic/non-kinetic coordination tools with directed energy inclusion - Real-world representative target testing and lethality - Sensor applications analysis supporting Fleet and Marine Corps operations concepts High Power Microwave (HPM) Initiate: - Develop/test functional integrated HPM prototypes validating novel DE concept feasibility - Demonstrate controlled HPM effects in laboratory/limited field environments - Develop multi-shot solid-state HPM systems delivering multiple rapid high-power pulses Continue: - Novel HPM sensors including electronic Battle Damage Indication (eBDI) - AI for HEL & HPM systems increasing maritime operational lethality - HPM use in EM Maneuver Warfare and Integrated Defense understanding - HPM effects/lethality through RF coupling, device interaction physics, time-reversal techniques for optimized threat-agnostic defeat waveforms - HPM engagement systems range testing - System/mission level performance analysis and modeling - State-of-the-Art HPM low-profile steerable antennas; high energy density capacitors, solid-state switches, power supplies, hardened controls					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- HPM wide-bandwidth frequency agile amplifiers - Open architecture HPM source development for effective CONEMPS - Self-contained HPM prototypes with integrated sensor/C2 capabilities for UAS swarm defense - Solid-state/vacuum electronic HPM sources for flexible cross-spectrum waveforms Pulsed Laser (PL) Initiate: - Development of techniques and technologies to mitigate the adverse effects of atmospheric conditions on pulse laser beam propagation - Develop and refine pulse laser sub-components for seamless integration into functional prototype systems - Requirements analysis relating functional requirements to operational needs - Pulse laser critical component maturity investigation - Laboratory/field pulse laser dynamic engagements against multiple maneuvering targets Complete: - Ultra Short Pulse Laser (USPL) propagation mechanisms/effects - USPL sub-component maturation and integration for prototype experimentation - USPL requirements analysis and functional design - USPL critical component prototyping/testing/validation - USPL precision dynamic engagements against multiple targets High Energy Laser (HEL)/Counter Directed Energy Weapons (CDEW) Continue: - HEL efficiency enhancement via solid-state diode/fiber laser technologies - Atmospheric blooming, laser-maritime environment interactions understanding - Laser detection/testing sensors improvements - Novel NIR, MWIR, LWIR lasers development - Novel beam-director architectures and high energy laser optics - Counter-HEL and counter-HPM capability development - Metamaterial research for Counter Directed Energy Weapons Initiate: - HEL wavelength agility enhancement for fiber laser technologies					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Electric Weapons Technology Continue: Applied science efforts into Electric Weapons Technology for near to mid-term deployment of electric weapons including high-power lasers, microwaves, directed energy systems, and electromagnetic launchers. Research areas: optical fiber fabrication, laser media, optical coatings, ultrafast bandgap photonic materials; beam control systems for atmospheric/underwater high-power electromagnetic radiation propagation; high-power microwave sources and antenna design; high-intensity laser/microwave damage mechanisms characterization; increasing pulsed power systems and electromagnetic launcher efficiency/lifetime; decreasing Size, Weight, and Power (SWaP) while increasing robustness and automation. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY26 to FY27 is due to the completion of multiple Pulsed Laser research efforts.					
Title: High Speed Propulsion and Advanced Weapon Technologies	14.584	14.998	27.862	0.000	27.862
Description: This activity describes Navy applied research investments to advance the Navy's strategic goals of the Propulsion and Airframes Research Area within the Kinetic Systems Focus Area. These projects support the development of vehicle, propulsion, and energetic material technologies for high-speed propulsion and advanced weapon systems. The goal is to develop enabling technologies along with the workforce needed to support the development of real-time adaptive hypersonic weapon systems that balance unmatched range, speed, survivability, and precision with stringent size, weight, power, and cost (SWaP-C) requirements and platform integration constraints. ***FY 2026 Plans:*** Continuing: - Development and characterization of ultra-high temperature metamaterials and structures to enable, sensing, flow control, power generation, and improved aero-thermo-mechanical performance of aeroshells and high-speed propulsion systems. - Development of efficient, predictive computational tools for high-speed, air-breathing propulsion systems to enable robust digital-engineering methodologies. - Experimental and numerical investigation on the combustion characteristics of solid fuels in supersonic combustors.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of physics based computational structural analysis tools for prediction of impact damage in weapon structures due to atmospheric encounters under high-speed flow conditions. - Development and testing of new aeroshell material technology to extend laminar flow. - High-fidelity computations, ground test techniques and flow diagnostics to characterize neutral and ionized gas species. - Applied research for Nuclear Aircraft Carrier (CVN) compliant hypersonic air-breathing weapons to increase performance & operability. - Development of reduced orders models for rapid prediction of aerothermal and aerodynamic performance using data driven approaches such as machine learning, high-fidelity simulations and experiments as training data Complete: - Experimental and computational studies to extend the flight envelope of solid fuel ramjets to higher speeds and altitudes and to improve throttle-ability. Initiate: - Numerical and experimental investigations of emerging airbreathing propulsion technologies, particularly powder-fueled ramjets, to enhance weapon range while adhering to the Size, Weight, and Power (SWAP) constraints of naval platforms. - Development of reduced-order models to study the aerodynamics, aerothermal effects, aerothermostructural impacts, and Navigation, Guidance, and Control (NGC) strategies for morphing hypersonic vehicles.					
FY 2027 Base Plans: Continue: - Development and characterization of ultra-high temperature metamaterials and structures to enable, sensing, flow control, power generation, and improved aero-thermo-mechanical performance of aeroshells and high-speed propulsion systems. - Development of efficient, predictive computational tools for high-speed, air-breathing propulsion systems to enable robust vehicle-scale digital-engineering methodologies. - Experimental and numerical investigation on the combustion characteristics of solid fuels in supersonic combustors.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of physics based computational fluid and structural analysis tools for prediction of impact damage in weapon structures due to atmospheric encounters under high-speed flow conditions. - Development and testing of new aeroshell material technology to extend laminar flow. - Development of reduced orders models for rapid prediction of aerothermal and aerodynamic performance using data driven approaches such as machine learning, high-fidelity simulations and experiments as training data - Numerical and experimental investigations of emerging airbreathing propulsion technologies, to enhance weapon range while adhering to the Size, Weight, and Power (SWaP) constraints of naval platforms. - Development of reduced-order models to study the aerodynamics, aerothermal effects, aerothermostructural impacts, and Guidance, Navigation, and Control (GN&C) strategies for morphing hypersonic vehicles. Complete: - Applied research for Nuclear Aircraft Carrier (CVN) compliant hypersonic air-breathing weapons to increase performance & operability. - High-fidelity computations, ground test techniques and flow diagnostics to characterize neutral and ionized gas species. Initiate: - Applied research focused on real-time adaptive air-breathing cruise missile propulsion. Research towards adaptive air-breathing propulsion systems will provide propulsive and aerodynamic efficiency improvements that enable engagement from more survivable ranges to improve platform survivability, and optimize terminal approach vectors for maximum lethality against time-sensitive, highly-defended targets from survivable standoff. - Critical enabling technologies for Rotating Detonation Engine (RDE) and next generation ramjet and scramjet propulsion systems. Novel propulsion concepts for air-breathing engines will emphasize on enhancing weapon volumetric efficiency, increased range, and broadening the operational envelope of these systems while simultaneously exploring novel fuel developments and their implementation to meet Navy unique SWaP-C constraints. - Applied research to develop robust control algorithms, advanced estimation techniques, and GN&C electronics for hypersonic flight regimes. Research includes real-time adaptive algorithms for trajectory optimization and terminal guidance precision, multi-mission capabilities, both defensive and offensive, and enabling on-the-fly target updates, autonomous handling of complex maneuvers, and real-time estimation and adaptation to inflight perturbations.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Applied research focused on the development of advanced digital engineering tools and methodologies to enable rapid and affordable design of hypersonic systems compliant with naval carrier and launcher constraints. This includes the development of integrated multidisciplinary design, analysis, and optimization (MDAO) frameworks, digital twins, and automated design space exploration algorithms for hypersonic systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY26 to FY27 is to accelerate the maturation of critical enabling technologies for next-generation, Navy-compliant hypersonic weapon systems. This increased investment will directly support four priority research thrusts designed to deliver unmatched range, speed, and lethality while adhering to stringent naval SWaP-C and platform integration constraints. The research thrusts are: (1) Emerging Air-Breathing Cruise Missile Technologies to expand the operational envelope, enhance maneuverability, and significantly increase range of air-breathing systems. (2) Next-Generation Propulsion Enablers to develop and mature game-changing Rotating Detonation Engines (RDEs), advanced ramjet/scramjet technologies, and novel fuel formulations tailored for naval operations. (3) Resilient Guidance, Navigation, & Control (GN&C) to develop adaptive algorithms that enhance terminal precision and system autonomy in contested environments. (4) Advanced Digital Engineering to develop the foundational methodologies and proof-of-concept algorithms for advanced digital engineering to enable the rapid design of hypersonic systems that balance performance, manufacturability, and cost.					
Title: Navigation, Electro Optic/Infrared (EO/IR), and Sensor Technologies ***Description:*** This activity describes Navy Science and Technology investments in the areas of Electro Optic/ Infrared (EO/IR) devices and advanced sensors and includes investment/performance in the technology areas of EO/IR, Electronic Warfare (EW), Electromagnetic Warfare, and Communications. ***FY 2026 Plans:*** - Continue efforts into Imaging IR Countermeasures. The technical objective of this task area is to research and develop state-of-the-art technologies that will be used to support the protection of naval platforms against Imaging Infrared (IIR) seekers. Research will be conducted across a broad area of Optic/Infrared (EO/IR) technologies including Artificial Intelligence (AI) processing, counter-AI processing obscurants, modeling and advanced simulation tools, adaptive optics and supporting technologies. This area develops innovative EO/IR	4.198	8.508	5.333	0.000	5.333

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
sensing and countermeasure paradigms, to insure full EO/IR spectrum superiority. These technologies address near and emerging far term threats. ***FY 2027 Base Plans:*** - Initiate efforts into Surveillance Technolgies. The goal of these efforts is to conduct applied research to greatly enhance the RF sensing capabilities of systems optimized to detect signals reflected from targets. These systems can operate alone or as part of a distributed network and encompass systems operating across the Radio Frequency (RF) spectrum, from High Frequency (HF) to millimeter wave (MMW) frequencies. It encompasses enabling system concepts, technologies, architectures, and algorithms. Further, it develops concepts, techniques, and technologies to advance critical capabilities in advanced signal processing, waveform design, environmental characterization & adaptation, spectral maneuver capabilities, and provide robust operation despite the presence of interference. The objectives is to explore and develop new and innovative approaches, concepts, and technologies that provide the navy of the future the ability to quickly locate, target, and strike critical targets in the maritime. environment and ashore. - Continue efforts into Imaging IR Countermeasures. The technical objective of this task area is to research and develop state-of-the-art technologies that will be used to support the protection of naval platforms against Imaging Infrared (IIR) seekers. Research will be conducted across a broad area of Optic/Infrared (EO/IR) technologies including Artificial Intelligence (AI) processing, counter-AI processing obscurants, modeling and advanced simulation tools, adaptive optics and supporting technologies. This area develops innovative EO/IR sensing and countermeasure paradigms, to insure full EO/IR spectrum superiority. These technologies address near and emerging far term threats. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY26 to FY27 is due to more focus being directed to other applied research areas which deal with sensor technology.					
Accomplishments/Planned Programs Subtotals	24.837	30.635	38.838	0.000	38.838

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602114N / *Power Proj Applied Research*	**Project (Number/Name)** 0000 / *Power Proj Applied Research*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602114N / *Power Proj Applied Researc h*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	8.688	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.688

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Hypersonic Test Ventilation ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Hypersonic Test Ventilation	0.000	3.861
Congressional Add: Operational Aviation Fuel Synthesis Demonstration ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Operational Aviation Fuel Synthesis Demonstration	0.000	4.827
Congressional Adds Subtotals	0.000	8.688

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602123N *I Force Protection Applied Res*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	183.150	243.086	137.779	-	137.779	148.166	154.045	154.054	156.436	Continuing	Continuing
0000: *Force Protection Applied Res*	0.000	113.410	125.699	127.065	-	127.065	136.000	141.654	141.407	143.585	Continuing	Continuing
1510: *Expeditionary Campaign*	0.000	0.000	0.000	10.714	-	10.714	12.166	12.391	12.647	12.851	Continuing	Continuing
3270: *Sec. 2912 Operational Energy Savings*	0.000	1.200	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.200
9999: *Congressional Adds*	0.000	68.540	117.387	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	185.927

A. Mission Description and Budget Item Justification

America is a maritime nation with global responsibilities that require U.S. naval forces be respected around the world and decisive when it matters. The Office of Naval Research (ONR) was established to guide ongoing research to ensure the technical superiority of the U.S. Navy and Marine Corps. This Program Element (PE) addresses applied research associated with providing the capability of Platform and Force Protection for the U.S. Navy. This program supports the development of technologies associated with all naval platforms (surface, subsurface, terrestrial, and air) and the protection of those platforms. The goal is to provide the ability to deter, or avoid engagements, and if necessary, fight and win against adversary naval platforms or weapons. In the event of conflict, naval platforms must be able to resist and control damage while preserving operational capability. Research is focused on providing technologically superior defense of naval assets and delivering warfighting capabilities at reduced total ownership costs for surface and subsurface platforms through investments in the following Focus Areas: a) Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR)/Naval Space, b) Autonomy/Artificial intelligence (AI), c) Human & Biological Systems, d) Directed Energy & Kinetic Systems, e) Materials/Electronics, f) Power and Energy (formerly Power, Energy & Propulsion) g) Naval Engineering (formerly Platform Design and Engineering), h) Naval Aerospace, i) Undersea Systems and j) Ocean, Atmosphere, & Space. These investments in applied research move innovation from new technology identification to prototype. This program identifies and develops technologies for reduced observables technology and enhanced capability of naval aviation aircraft platforms in terms of mission effectiveness, platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. It also addresses innovation in technology development to provide substantial improvements in energetic material systems and subsystems, primarily in terms of performance, but also addressing safety, reliability, and affordability concerns. The program supports mission-driven design thinking and problem solving within the Naval Research and Development Establishment (NR&DE) and academia in support of culture changes towards agile and rapid prototyping driven by effective innovation process and operations.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T) and the business of innovation. Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments, as well as the NavalX office, to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments, combined with innovation operations, hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602123N *I Force Protection Applied Res*

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative and not exhaustive of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	191.716	125.699	138.041	-	138.041
Current President's Budget	183.150	243.086	137.779	-	137.779
Total Adjustments	-8.566	117.387	-0.262	-	-0.262
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.213			
• Congressional Rescissions	-	-			
• Congressional Adds	-	121.600			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.743	0.000			
• SBIR/STTR Transfer	-5.822	0.000			
• Program Adjustments	0.000	0.000	-0.262	-	-0.262
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Underwater Electromagnetic Theory and Ocean Hydrod*	0.000	9.266
Congressional Add: *Advanced Manufacturing of Unmanned Maritime System*	0.000	4.827
Congressional Add: *Advanced Power Distribution Systems for Future Nav*	0.000	4.827
Congressional Add: *Characterization of High-Performance Carbon Fiber*	0.000	3.379
Congressional Add: *High-Performance Coatings and Materials*	0.000	2.896
Congressional Add: *Launch and Refueling for Small USV*	0.000	2.896
Congressional Add: *Microgrid Demonstration for Costal Facilities*	0.000	1.931
Congressional Add: *Multifunctional Composite Structures for Naval Shi*	0.000	4.827
Congressional Add: *Multi-Material Flexible Automated Manufacturing*	0.000	3.861
Congressional Add: *UAS Degraded Environment Facility*	0.000	7.723

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602123N *I Force Protection Applied Res*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Congressional Add: *Additive manufacturing for bonded metal matrix com*	4.827	7.723
Congressional Add: *Alternative energy search*	24.134	28.961
Congressional Add: *Emerging Robotic Advanced Manufacturing Technology*	2.413	0.000
Congressional Add: *Intelligent Data Management for Distributred Platf*	4.827	12.067
Congressional Add: *Stealth Engineering Automation*	7.723	8.688
Congressional Add: *University-based Advanced Materials and Manufactur*	4.827	0.000
Congressional Add: *Precision AI Enabled Naval Supply Chain Logistics*	5.792	5.792
Congressional Add: *Talent and technology for Navy power and energy systems*	4.827	7.723
Congressional Add: *Resilient innovative sustainable economies via university partnerships*	6.757	0.000
Congressional Add: *Multi-material flexible automated manufacturing*	2.413	0.000
Congressional Add Subtotals for Project: 9999	68.540	117.387
Congressional Add Totals for all Projects	68.540	117.387

Change Summary Explanation

Funding: The FY 2027 budget request was reduced by $262K to realign resources towards higher priority science and technology initiatives.

Technical: PU 1510: Expeditionary Campaign- was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. These investments were previously funded in PU 0000. This is not a new start.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602123N / *Force Protection Applied Res*	Project (Number/Name) 0000 / *Force Protection Applied Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Force Protection Applied Res*	0.000	113.410	125.699	127.065	-	127.065	136.000	141.654	141.407	143.585	Continuing	Continuing

Note

Investments in Project 0000 Force Protection Applied Research have been realigned in this same PE 0602123N under Project 1510 Expeditionary Campaign. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

This project addresses applied research associated with providing the capability of Platform and Force Protection for the U.S. Navy. It supports the development of technologies associated with all naval platforms (surface, subsurface, terrestrial, and air) and the protection of those platforms. Research is focused on providing technologically superior defense of naval assets and delivering warfighting capabilities at reduced total ownership costs for surface and subsurface platforms through investments in applied research in Power, Energy, Propulsion, Engineering, and Design. This project develops technologies for reducing detectable signatures, while enhancing the mission effectiveness of naval platforms (surface, subsurface, terrestrial, and air) through improvements in platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. The project addresses technology development that provides substantial performance improvements in energetic material systems and subsystems, while addressing safety, reliability, and affordability concerns.

This project is broken out into five primary areas of study: Aircraft Technology, Fleet Force Protection and Defense Against Undersea Threats, Advanced Energetics, Surface Ship and Submarine Hull Mechanical & Electrical (HM&E), and Naval Research Enterprise/Innovation Operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Aircraft Technology	26.086	31.490	30.249	0.000	30.249
Description: The Aircraft Technology activity develops technologies for reduced observables technology and enhanced capability of naval aviation aircraft platforms in terms of mission effectiveness, platform range, operational energy, expeditionary capability, responsiveness, survivability, observability, readiness, safety and life cycle cost. It also develops new Naval air vehicle concepts and high impact, saleable naval air vehicle technologies, such as - autonomous air vehicle command and control, helicopter and tilt rotor systems, aerodynamics, propulsion systems, materials, structures and flight controls for future and legacy air vehicles. The Sea-Based Aviation National Naval Responsibility (SBA NNR) Structures and Materials program will develop the next generation structural capability and material response science for aircraft technology in fixed and rotary wing, manned and unmanned airframe technology to achieve reduced weight, increased durability,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
strength, streamlined manufacturability, reduced life-cycle cost and maintenance/readiness gaps improvements. Program payoffs include increased availability/readiness, reduced sustainment requirements, fatigue/loads life enhancement, reduced weight and improved range, and advanced prognostics design tools. These efforts address unique attributes to propulsion, power and thermal management technologies for Naval Aviation, as well as those having higher importance to Naval Aviation and some that are more pervasive to all of military aviation. Related basic research efforts are addressed under 0601153N Defense Research Sciences. ***FY 2026 Plans:*** AERODYNAMICS Continue: - Advanced computational methods for fully coupled aerodynamic interface between ships and aircraft - Reduced-order modeling of complex flow fields enabling real-time, high-fidelity simulations of ship-based aircraft operations - Flow field manipulation and control for air vehicles in maritime environments - In situ diagnostics for ship airwake dynamics coupled to ship motions and environmental flow fields - Advanced weapons aerodynamics for increased range and maneuverability - Compact, highly-integrated inlets for air-breathing weapons - Aerodynamics of novel configurations including multi-rotor systems and operational environments - Revolutionary launch & recovery approaches for unmanned aerial systems FLIGHT DYNAMICS AND CONTROL Initiate: - Unconventional UAS plant models and controls for sea-based flight operations - Optimal trajectory planning algorithms for embedded applications Continue: - Experimental validation of fluidic effector control forces with free-body dynamics in extreme maneuvers - Validation of human/machine coupling mechanisms and physiological event signatures in flight - Multibody control systems with guaranteed performance relative to desired end states - Robust control in turbulent flow fields for ship-based operations - Control effectors enabling VTOL utility with fixed-wing efficiency - Control system interactions between piloted aircraft and human performance					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete: - Algorithms and sensors to enable precise ship-relative navigation in GPS-denied environments POWER AND PROPULSION Initiate: - Research on Casing Treatments for fans and compressors - High Speed Inlet Bleed Research - Understanding ice-adhesion origins for rational icephobic coating design Continue: - Resin Transfer Molding for High Temperature Polyimide Composites - Cooling and thermal management for engines and auxiliary systems - Diagnostics, prognostics and control for Integrated Power, Propulsion and Thermal Management - Highly integrated propulsion inlets and exhausts - Sand, Salt and Dust Ingestion research including modeling, separation, deposition, coatings, and sensing - Next Generation Propulsion Enablers: advanced modeling, rotating detonation, casing treatments, high temperature materials, compression technologies, engine robustness in austere environments - Highly loaded efficient turbomachinery with improved operability - Advanced materials and coatings for austere environments - Hybrid propulsion for small to mid-size VTOL capable UAS Complete: - High-Bandwidth Aeromechanical Identification Methodology (AIM) Technology for Military Turbomachinery - EMI mitigation for future electric generators - New Suite of Insulations for High Power Density Electrical Generators - Multifunctional Erosion Resistant, Icephobic, and Salt-Phobic Coating System for Inlet Applications - Development and Validation of a Fluidic Sweep Diverter SCIENCE OF AUTONOMY Continue: - High confidence/safe autonomous single and multi-vehicle control in naval environments and human interaction with advanced autonomy for decentralized heterogeneous naval systems and interactive machine learning - Theory-based methods for rapid, safe adoption of autonomy capabilities including Verification and Validation, safety, risk management, human systems integration, and robustness in complex naval, adversarial environments					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Safe perception-based autonomous control in complex naval environments with limited communications and autonomy supporting combined unmanned and manned air systems/units					
FY 2027 Base Plans: AERODYNAMICS Continue: - Advanced computational methods for fully coupled aerodynamic interface between ships and aircraft - Reduced-order modeling of complex flow fields enabling real-time, high-fidelity simulations of ship-based aircraft operations - Flow field manipulation and control for air vehicles in maritime environments - In situ diagnostics for ship airwake dynamics coupled to ship motions and environmental flow fields - Advanced weapons aerodynamics for increased range and maneuverability - Compact, highly-integrated inlets for air-breathing weapons - Aerodynamics of novel configurations including multi-rotor systems and operational environments - Revolutionary launch & recovery approaches for unmanned aerial systems FLIGHT DYNAMICS AND CONTROL Continue: - Experimental validation of fluidic effector control forces with free-body dynamics in extreme maneuvers - Validation of human/machine coupling mechanisms and physiological event signatures in flight - Multibody control systems with guaranteed performance relative to desired end states - Robust control in turbulent flow fields for ship-based operations - Control effectors enabling VTOL utility with fixed-wing efficiency - Control system interactions between piloted aircraft and human performance - Unconventional UAS plant models and controls for sea-based flight operations - Optimal trajectory planning algorithms for embedded applications POWER AND PROPULSION Continue: - Resin Transfer Molding for High Temperature Polyimide Composites - Cooling and thermal management for engines and auxiliary systems - Diagnostics, prognostics and control for Integrated Power, Propulsion and Thermal Management - Highly integrated propulsion inlets and exhausts					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Sand, Salt and Dust Ingestion research including modeling, separation, deposition, coatings, and sensing - Next Generation Propulsion Enablers: advanced modeling, rotating detonation, casing treatments, high temperature materials, compression technologies, engine robustness in austere environments - Highly loaded efficient turbomachinery with improved operability - Advanced materials and coatings for austere environments - Hybrid propulsion for small to mid-size VTOL capable UAS - Research on Casing Treatments for fans and compressors Complete: - Understanding ice-adhesion origins for rational icephobic coating design - High Speed Inlet Bleed Research Initiate: - Integration of Rotating Detonation Combustors with gas turbine components - Advanced heat dissipation technologies - Lightweight compressor materials and protective turbine coatings - Compact, reliable engine materials for Naval UAV applications - Compact inlets with flow control and distortion reduction SCIENCE OF AUTONOMY Continue: - High confidence/safe autonomous single and multi-vehicle control in naval environments and human interaction with advanced autonomy for decentralized heterogeneous naval systems and interactive machine learning - Theory-based methods for rapid, safe adoption of autonomy capabilities including Verification and Validation, safety, risk management, human systems integration, and robustness in complex naval, adversarial environments - Safe perception-based autonomous control in complex naval environments with limited communications and autonomy supporting combined unmanned and manned air systems/units ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied R es*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY2026 to FY2027 is due to completion of multiple efforts across Aircraft Technology programs including Aerodynamics, Flight Dynamics & Controls, Power & Propulsion, and Structures & Materials.					
Title: Fleet Force Protection and Defense Against Undersea Threats	2.132	2.092	5.058	0.000	5.058
Description: Fleet Force Protection and Defense against Undersea Threats efforts include applied research for complementary sensor and processing technologies for platform protection. Current small platforms (surface, subsurface and airborne) have little to no situational awareness (SA) or self-protection against air, surface, and asymmetric threats. A goal of this activity is to provide these platforms with effective self-protection. The technology areas specific to platform protection will develop individual, multispectral electro-optical (EO), infrared (IR), radio frequency (RF), electro-magnetic (EM), visual and acoustic or chemical sensors/ biosensors and associated processing. To defend platforms from current and advanced threats in at-sea littoral environments and in port, these technologies must improve multispectral detection and distribution of specific threat information. ***FY 2026 Plans:*** - Continue efforts in Materials for Advanced Sensor Technology. The focus of these efforts is to demonstrate at pertinent scale and environment of the performance of advanced materials and innovative processing techniques, which include sensor and data analysis capabilities for enhanced situational awareness for platform protection. Successful manufacturing of devices/components utilized newly discovered advanced materials requires understanding the complex relationship between material constituents, fabrication methodologies and processes, device or component design and performance. The focus is on the demonstration above the laboratory bench level, including evaluation of operating limits and practicality of the methodologies. The work in this area also includes provisions for protection of human assets from chemical, explosive and biological threats, demonstrating improved sensitivity and response time. Specific focus of work in this area is the demonstration of advanced prototype of sensors and processing technologies for identification of trace levels of chemical sensors, including sensors for identification of trace levels of explosives. - Continue research into Next Generation Sensors. There is a focus within this task on Seabed Sensing and Intervention work. An essential element to maintaining maritime superiority depends on acoustic stealth. Currently, the U.S. Navy assesses and supports the acoustic signatures of its vessels (submarines or surface ships) through full-scale advanced measurement technology to quantify and diagnose noise sources. The scientists and engineers use this measurement data to calculate the vessel's vulnerability to improve operations, tactics, and ship design. The goal is to demonstrate an imaging capability for locating the acoustic radiation at					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
the vessel's surface, which would be transitioned to the Navy's advanced measurement facilities. The proposed imaging capability is based on an NRL-developed signature technology, nearfield acoustical holography (NAH), where we propose to extend this technology to moving underwater vehicles. The acoustic community currently uses NAH to uncover the fundamental sound radiation mechanisms at the surface of the radiating stationary object. The Fleet has succeeded in making modern submarines moving at slow speeds (ultra-quiet mode) acoustically stealthy. Therefore, the Navy's primary focus for the next generation attack submarine SSN(X) (and beyond) is on maintaining the vessel's stealth while moving at faster speeds. To enable this capability, the Navy needs advanced measurement technologies to understand the acoustic radiation mechanisms from a moving submarine. ***FY 2027 Base Plans:*** - Continue efforts in Materials for Advanced Sensor Technology. The focus of these efforts is to demonstrate at pertinent scale and environment of the performance of advanced materials and innovative processing techniques, which include sensor and data analysis capabilities for enhanced situational awareness for platform protection. Successful manufacturing of devices/components utilized newly discovered advanced materials requires understanding the complex relationship between material constituents, fabrication methodologies and processes, device or component design and performance. The focus is on the demonstration above the laboratory bench level, including evaluation of operating limits and practicality of the methodologies. The work in this area also includes provisions for protection of human assets from chemical, explosive and biological threats, demonstrating improved sensitivity and response time. Specific focus of work in this area is the demonstration of advanced prototype of sensors and processing technologies for identification of trace levels of chemical sensors, including sensors for identification of trace levels of explosives. - Continue research into Next Generation Sensors. There is a focus within this task on Seabed Sensing and Intervention work. An essential element to maintaining maritime superiority depends on acoustic stealth. Currently, the U.S. Navy assesses and supports the acoustic signatures of its vessels (submarines or surface ships) through full-scale advanced measurement technology to quantify and diagnose noise sources. The scientists and engineers use this measurement data to calculate the vessel's vulnerability to improve operations, tactics, and ship design. The goal is to demonstrate an imaging capability for locating the acoustic radiation at the vessel's surface, which would be transitioned to the Navy's advanced measurement facilities. The proposed imaging capability is based on an NRL-developed signature technology, nearfield acoustical holography (NAH), where we propose to extend this technology to moving underwater vehicles. The acoustic community currently uses NAH to uncover the fundamental sound radiation mechanisms at the surface of the radiating stationary					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
object. The Fleet has succeeded in making modern submarines moving at slow speeds (ultra-quiet mode) acoustically stealthy. Therefore, the Navy's primary focus for the next generation attack submarine SSN(X) (and beyond) is on maintaining the vessel's stealth while moving at faster speeds. To enable this capability, the Navy needs advanced measurement technologies to understand the acoustic radiation mechanisms from a moving submarine. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to the increase in the efforts associated with the Materials/ Electronics and the Undersea Systems Focus Areas that affect platform design and engineering.					
Title: Advanced Energetics ***Description:*** Advanced Energetics efforts address technology development to provide substantial improvements in energetic material systems and subsystems, primarily in terms of performance, but also addressing safety, reliability, and affordability concerns. Goals include: advanced energetic materials for warheads, propellants, and reactive material based subsystems for both defensive and offensive applications. Efforts include: development of new fuels, oxidizers, explosive ingredients and formulations; and reliable simulation tools and diagnostics to develop and design superior-performance, and/or reduced-vulnerability systems tailored to specific warfighter missions. ***FY 2026 Plans:*** Overall, continue applied advanced energetic materials research efforts focused on longer range, reduced time-to-target, enhanced lethality/target effects, and cost savings pertaining to kinetic weapons without sacrificing insensitive munitions requirements. Continue: -Computational studies of reaction pathways in terms of mechanistic and kinetic details to guide energetic materials synthesis and scale up development. -Research focused on new reactive material formulations and configurations for warhead use. New consolidated effort towards high performing explosive oxidizer materials, polymer binders, and new energetic material molecular configurations for simplistic, cost-effective synthesis of potentially high temperature explosives.	5.493	5.094	10.926	0.000	10.926

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
New compliant commodity ingredients, and new scale-up and formulation processes will be transitioned to the industrial base as appropriate. -Novel dynamic experimentation in support of design, evaluation and progression of enhanced lethality warhead concepts with focus on smaller form-factor without sacrificing effect on target; and advanced solid rocket motor, air-breathing, and other novel tactical propulsion concepts for extended range and reduced time-to-target with additional focus on throttling capability for extended range. -Applied research focused on development, scale up, and evaluation of novel explosive, propellant, and reactive composite ingredients and energetic formulations, in addition to dynamic diagnostic experimental and multi-scale theoretical efforts for development of next generation higher performing weapon systems. -Research focused on ingredient chemistry and chemical processing technologies. This work includes: synthesis, scale up, and evaluation of new energetic (i.e. explosives, oxidizers, fuels) and other formulation-enabling ingredients (i.e. polymer binders, plasticizers), and exploration and adaptation of innovative mixing, formulation, and other novel manufacturing processes for agile progression of enhanced energetic formulations. -Research in development and application of experimental diagnostics of novel energy conversion concepts to enhance performance, more efficiently exploit available energy, and more effectively couple energy to target for air, surface, and underwater warhead and propulsion applications. This work includes: explosive blast, reactive materials, and propulsion relevant combustion science, shock-wave/energetic formulation studies, advanced tactical propulsion concepts, and ingredient specific structure/property studies. Complete: -Research in development and application of modeling, simulation, and computation to predict dynamic response and effects of energetic processes such as ignition, combustion/deflagration, shock, fragmentation, and detonation in order to predict weapon performance, lethality, and lifecycle for air, surface, and underwater weapon applications. -New methods toward applied theory and model development for shock interactions. New experimental and physics based sub-model development for incorporating novel damage effects into lethality codes. Initiate: -Computational effort to model reaction pathways and kinetics in caged nitramine synthesis, with applications toward exploring new potential molecular energetic modalities in organic molecules.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Research on new metallized propellant ingredients for enhanced solid fuel formulations with higher energy content for longer range rocket motors.					
FY 2027 Base Plans: Continue: - Computational studies of reaction pathways in terms of mechanistic and kinetic details to guide energetic materials synthesis and scale up development. - Research focused on new reactive material formulations and configurations for warhead use. New consolidated effort towards high performing explosive oxidizer materials, polymer binders, and new energetic material molecular configurations for simplistic, cost-effective synthesis of potentially high temperature explosives. New compliant commodity ingredients, and new scale-up and formulation processes will be transitioned to the industrial base as appropriate. - Novel dynamic experimentation in support of design, evaluation and progression of enhanced lethality warhead concepts with focus on smaller form-factor without sacrificing effect on target; and advanced solid rocket motor, air-breathing, and other novel tactical propulsion concepts for extended range and reduced time-to-target with additional focus on throttling capability for extended range. - Applied research focused on development, scale up, and evaluation of novel explosive, propellant, and reactive composite ingredients and energetic formulations, in addition to dynamic diagnostic experimental and multi-scale theoretical efforts for development of next generation higher performing weapon systems. - Research focused on ingredient chemistry and chemical processing technologies. This work includes: synthesis, scale up, and evaluation of new energetic (i.e. explosives, oxidizers, fuels) and other formulation-enabling ingredients (i.e. polymer binders, plasticizers), and exploration and adaptation of innovative mixing, formulation, and other novel manufacturing processes for agile progression of enhanced energetic formulations. - Computational effort to model reaction pathways and kinetics in caged nitramine synthesis, with applications toward exploring new potential molecular energetic modalities in organic molecules. - Research on new metallized propellant ingredients for enhanced solid fuel formulations with higher energy content for longer range rocket motors. - Research in development and application of experimental diagnostics of novel energy conversion concepts to enhance performance, more efficiently exploit available energy, and more effectively couple energy to target for air, surface, and underwater warhead and propulsion applications. This work includes: explosive blast, reactive materials, and propulsion relevant combustion science, shock-wave/energetic formulation studies, advanced tactical propulsion concepts, and ingredient specific structure/property studies.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Initiate: - Research on the commonly used rocket motor polymer binder hydroxyl-terminated polybutadiene (HTPB) focused on understanding variations in material/chemical properties and their effects on polymer curing and mechanical characteristics. - Applied research focused on the development of advanced warhead technologies, including configurations with reactive materials, to significantly enhance hypersonic weapon lethality for various target types. Research includes materials development, dynamic performance testing, and lethality modeling and simulation. - Applied research focused on energetic materials relevant aspects of advanced air-breathing and detonation-based tactical propulsion concepts, materials and configurations, and modeling. Specifically, this includes synthesis, evaluation, and testing of novel high-energy-density fuel formulations designed to enhance combustion performance and detonability for application in high-speed air-breathing propulsion systems, including ramjet, scramjet, and rotating detonation engines (RDEs), to enable next-generation hypersonic capabilities. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY2026 to FY2027 is due to the increase in applied research focused on energetic materials relevant aspects of advanced air-breathing and detonation-based tactical propulsion concepts, materials and configurations, and modeling.					
Title: Surface Ship and Submarine Hull Mechanical and Electrical (HM&E) ***Description:*** Technology programs focused on providing technologically superior warfighting capabilities at reduced total ownership costs for surface and subsurface platforms through investments in applied research and advanced technology development of programs in: a) Power, Energy, Propulsion, Engineering and Design. This element also includes the National Naval Responsibility in Naval Engineering (NNR-NE). Specific research themes are: Power and Energy Technology: Efforts address electrical and auxiliary system and component technology to dramatically	70.279	74.979	68.239	0.000	68.239

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
improve naval capabilities by providing energy and power resiliency through applied research into energy and power density, control, operating efficiency, operational endurance, recoverability from casualties, and design tools. A major investment focus is providing the power, energy, and thermal management required for directed energy weapons and advanced sensor systems on current and future surface combatants. Significant investments are also focused on improving the energy performance of unmanned systems for the next generation surface fleet, subsea and seabed warfare, and expeditionary forces wherein the limited availability of power and energy are critical. Platform Design and Engineering Technology: This research area seeks to further the applied physics and mathematics necessary to increase force effectiveness by improving platform hydrodynamics, platform structures, platform resiliency/ survivability, autonomy, and enabling digital technologies needed to improve naval warfighting capabilities as they relate to platforms/capabilities for use in expeditionary, surface and subsurface warfare. - Hydrodynamics: Critical design for naval platform hydrodynamics that is focused on the applied sciences, computation, laboratory experiments, and at-sea experimentation to develop the understanding and prediction capabilities for all hydrodynamic phenomena associated with naval sea-going platforms including, surface ships, submarines, unmanned vessels and manned small craft. Key research goals are to fully understand the physics of hydrodynamics of wakes, ship dynamics/control, propulsors and their effects on vessel performance and associated energy dissipation into the environment to provide science-based metrics for the evaluation of new design concepts to improve efficiency, signatures, and overall capabilities. - Platform Structures: Focused on all timescales of varying reliability of naval structures. Key applied research is focused on the analysis and prediction for a ship structural system with uncertainty quantification and propagation based on real world usage.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Unmanned Vehicles (UxV): Autonomy for UxVs and related mission functions aligned with Naval S&T strategic focus on autonomy and unmanned vehicles in support of surface, submarine, subsea/seabed naval warfare. - Sea Platform Resiliency: Aligned with survivability S&T strategic focus area, research investigates susceptibility, survivability, and recoverability of all naval platforms. Work in susceptibility of naval platforms concentrates on signature reduction across the acoustic and non-acoustic spectrums. Applied research on survivability seeks to improve the ability of naval platforms to survive under stressing combat conditions, before, during, and after being affected by adversarial actions from kinetic and/or non-kinetic effectors. Research in recoverability of naval platforms seeks to better understand the complex nature of modern damage control measures necessary to enable platforms to recover to capability states necessary to avoid mission kill. - Digital Engineering: Naval engineering and platform design efforts to increase the speed to field and capability resiliency in the engineering process across platform lifecycles through the enablement of virtual design/monitor/usage models to be better informed through improved modeling and data science. Concentration of effort is placed on digitally linking all aspects of a platform lifecycle from ideation to destruction with identifiable metrics of military utility enabling fuller solution trade-space exploration.					
FY 2026 Plans: Power & Energy Technologies, includes the following: -Alternative Fuels -Power Distribution -Design Tool development -Thermal Management Technology -Energy Storage -Power Generation - Complete research efforts associated with superconducting cables for flexible ship degaussing system design and sustainable deployment for new and existing surface ship and submarine programs. - Complete electromechanical machinery applied research to reduce energy demand and improve component and power system energy conversion efficiencies. - Complete Naval installation microgrid resilience via adoption of shipboard zonal distribution. - Continue applied superconductivity research in support of future Naval HM&E and mission systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts on the Naval Enterprise Partnership Teaming with Universities for National Entrepreneurship (NEPTUNE) program. The effort is derived from previous efforts in the areas of advanced energy systems research, which was focused on enhancing collaborations across academia, industry and DON beneficiaries. The NEPTUNE program is focused on conducting research that provides Navy Energy Education & Training for students. - Continue applied research in Thermal Management to address directed energy, environmental control needs, and update Navy design tools to include advanced thermal modeling capability. - Continue applied research in Medium Voltage Direct Current (MVDC) electrical architectures to reduce risk on future platforms. - Continue research in support of safely integrating large-scale embedded energy storage onto Naval platforms. This includes containment and non-propagation research, and development of the knowledge needed to certify technologies. - Initiate research efforts associated with air-independent propulsion. - Initiate Fuel flexibility for contingency operations project - Initiate applied research in manufacture of attritable fuel cells - Initiate research on cooperative single atom catalysis - Initiate zero-volt, energy-dense, ultrasafe battery systems (ZEUS) research - Initiate Secure AI for Power Systems - Initiate research on manufacture of high efficiency and flexible organic solar cell modules with long lifetimes. - Initiate non-intrusive load monitoring (NILM) capability improvement Design Science, includes the following: - High Fidelity Systems Physics - Systems Complexity Engineering - Virtual Design and Validation Modeling and Simulation - Complex Systems Engineering and Architecture - Digital Engineering for Naval Systems - Continue applied research in hydrodynamics of surface and subsurface platforms and propulsion focusing on the prediction of innovative propulsion concepts and platform designs that improve control of dynamic behaviors to improve efficiency, speed, maintainability, and maneuverability, while reducing overall associated platform signatures, weight, and lifecycle cost.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts in enhanced high-fidelity physics modeling and simulation capabilities for high displacement shock events, to improve predictive capabilities and improve design tools and guidance - Continue development of high-fidelity physics and generalized wave propagation modeling efforts in the electromagnetic spectrum, targeting improved tools for assessing platform and system electromagnetic signatures Integrated Cyber-Physical Technologies, includes the following - Artificial Intelligent Platforms - Morphing and Reconfigurable Systems - Collaborative Platforms - Crewed Platform Controls and Automation - Continue efforts in applied research of crewed platform autonomous systems to improve warfighter efficiency, damage control, and adaptability in uncertain conditions. -Continue efforts autonomous surface (USV) and undersea platforms (UUV) focusing on the resilience of systems and system of systems for extended time between needed human intervention to extend range, time on station, signature reduction, and adaptability. -Initiate efforts in morphing reconfigurable autonomous systems technologies to create efficient adaptable modular autonomous systems. Resilient Naval System Technologies, includes the following: - System Vulnerability Technologies - System Susceptibility Technologies - Recoverable Systems Technologies - Extensible Resilient Technologies - Advanced Maneuver and Propulsion - Complete Efforts in Propulsor Hydrodynamics - Complete efforts in Submarine Hydrodynamics - Complete efforts in enhanced high-fidelity physics modeling and simulation capabilities for high displacement shock events, to improve predictive capabilities and improve design tools and guidance - Continue research efforts in support of on the Tactical Submarine Evolution Plan (TSEP) S&T, Submarine Detectability, Integrated Permanent Magnet Motors, and Submarine Future Technologies.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on broad based countermeasures and signature improvement technologies associated with Non-Acoustic Undersea Warfare. - Continue applied research program on Total Platform Resiliency that seeks to improve the resiliency and extensibility of complex platforms and systems of systems throughout their lifecycle. - Continue efforts in applied research of manned platform autonomous systems, as well as autonomous surface (USV) and undersea platforms (UUV) focusing on the Resiliency of systems and system of systems for extended time between needed human intervention to extend range, time on station, signature reduction, warfighter efficiency, damage control, and adaptability in uncertain adversarial battlespaces. - Continue development of high-fidelity physics and generalized wave propagation modeling efforts in the electromagnetic spectrum, targeting improved tools for assessing platform and system electromagnetic signatures - Continue efforts in applied research of crewed platform autonomous systems to improve warfighter efficiency, damage control, and adaptability in uncertain conditions. - Continue applied research in Wave Transport Technologies to reduce exploitable electromagnetic, optical, and infrared signatures from naval systems. - Initiate applied efforts in unique effects of arctic conditions upon surface ship signatures - Initiate efforts in applied Digital Twin technologies to specific creating robust self-repairing cyber-physical systems - Initiate efforts in applied research into Coupled Hydrodynamics and Structural Acoustics to reduce radiated signatures - Initiate efforts in Innovative Structural technologies for new modular low susceptibility structures for naval systems - Initiate efforts in applied research into Digital Engineering Frameworks for advanced platform design Spectrum Superiority: - Continue research efforts for passive and active long-range high-resolution detection and imaging for increased survivability and situational awareness even in degraded/contested environments. - Continue research efforts into coherent combination of optical, infrared, and mm-wave imagers for increased resolution and longer-range detection. - Initiate research efforts into alternative imaging modalities (spectral, temporal, polarization, event-based/ neuromorphic) to improve target acquisition.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Explosive Hazard Defeat in Expeditionary Warfare: - Continue design and development of inexpensive, miniaturized, low power electrochemical sensors for use in autonomous and distributed sensor networks in order to provide real-time, stand-off detection of explosive hazards in expeditionary missions; developing real time, standoff, moving target, laser based detection for explosives and hazardous chemicals in littoral environment; and developing chemical vapor sensing strategy for application in littoral environment. - Continue design and development of modular compact sensors and automated algorithms to rapidly assess, analyze, and report damage to infrastructure for repair following an attack or natural disaster particularly damage to runways, roads, piers, utilities, and buildings. - Continue design, development and prototyping scalable precision neutralization systems for threat explosive hazards, mines, and kill chain components with lethal or non-lethal force from standoff distances to enable in-stride littoral movement and maneuver, designated ground corridors, at forward aviation points, littoral transition points, and in designated areas of interest. - Continue research to develop lightweight expendable munitions deployed from unmanned aerial systems to spot neutralize explosive hazards. Includes autonomous hazard identification, continually tracks, and maneuvers a warhead to the target to be neutralized. - Continue research to develop compact detection flow cells for explosives. - Continue applied research of a fluorescence scanning sensor to detect explosive hazards. - Continue research to enhance the sensing of a small unmanned system capable of operating underwater and in the air to support finding and reacquiring explosive targets in expeditionary environments. This uses artificial intelligence techniques and pushes near-real time data into the common operating picture. - Continue research to forward the timely information coming from new expeditionary antisubmarine warfare sensors with in-situ processing in the noisy littorals into the undersea warfare common operational picture. -Continue research into optimized communications in the littoral environment using operational forecast models and coastal/terrestrial radio frequency propagation characteristics validated through field tests. - Continue research to demonstrate a compact, solid-state, fully integrated polarimetric light detection and ranging sensor for a small unmanned aerial system with quad-polarization, demultiplexing metasurfaces, and mutipixel time of flight single photon-counting array. - Continue design and development of electronics for sensors and communications for multi-domain small unmanned aerial system that can reach underwater locations rapidly and provide bathymetry, detection, interrogation, neutralization and communications capabilities for the defeat of explosive hazards and other landing obstacles from the very shallow waterzone to the inland objective.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts in Power and Energy Technology. Power and energy are central to modern warfare. Increased speed and endurance, and advanced weapons systems will strain power systems of all sizes from surface combatants to expeditionary base micro-grids, to devices smaller than handhelds. Consequently, efforts conducted in this thrust are aimed at enabling increasingly efficient, reliable, resilient, and abundant energy for Navy and Marine Corps infrastructure, platforms, systems, and equipment through optimization of power and energy density, energy efficiency, service life, reliability, low maintenance operation, safety, and cost. Power and energy generation and storage requirements often dictate the ultimate capabilities of naval systems and must do so reliably in extreme environments to meet the naval forces' needs. Low-maintenance, reliable power and energy solutions will enable longer missions. Operating, sustaining, and increasing the lethality of modern platforms and systems requires a focus on power and energy technologies. To achieve these objectives, this thrust encompasses research in materials for advanced naval platform and expeditionary power generation, distribution, and management. - Continue the development of Power Electronics Technologies. The objective of this area is to increase the power density, reduce the volume, and reduce the weight of power converters, pulsed power components, and systems for applications. Those systems include but are not limited to electric propulsion for surface ships and submarines; power distribution on Navy ships and aircraft; powering weapons and sensors; and force protection. Solutions emphasizing efficiency and compactness are emphasized in order to address prime power constraints imposed on both large platforms and distributed autonomous systems operating solely or in a swarm environment. This is an expansion of the previous mentioned efforts to develop and explore new high voltage, high efficiency wide bandgap and ultra-wide bandgap power switches for electric propulsion and electric weapons as well as an expansion of the previous mentioned efforts to research High-Voltage Planar Low Damage GaN Power Switches. ***FY 2027 Base Plans:*** Power & Energy Technologies, includes the following: -Alternative Fuels -Power Distribution & Control -Design Tool development -Thermal Management Technology -Energy Storage -Power Generation					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete applied research in Medium Voltage Direct Current (MVDC) electrical architectures to reduce risk on future platforms. - Complete research in support of safely integrating large-scale embedded energy storage onto Naval platforms. This includes containment and non-propagation research, and development of the knowledge needed to certify technologies. - Continue Fuel flexibility for contingency operations project - Continue applied research in manufacture of attritable fuel cells - Continue research on cooperative single atom catalysis - Continue zero-volt, energy-dense, ultrasafe battery systems (ZEUS) research - Continue Secure AI for Power Systems - Continue research on manufacture of high efficiency and flexible organic solar cell modules with long lifetimes. - Continue non-intrusive load monitoring (NILM) capability improvement - Continue applied superconductivity research in support of future Naval HM&E and mission systems. - Continue research efforts on the Naval Enterprise Partnership Teaming with Universities for National Entrepreneurship (NEPTUNE) program. The effort is derived from previous efforts in the areas of advanced energy systems research, which was focused on enhancing collaborations across academia, industry and DON beneficiaries. The NEPTUNE program is focused on conducting research that provides Navy Energy Education & Training for students. - Continue applied research in Thermal Management to address directed energy, environmental control needs, and update Navy design tools to include advanced thermal modeling capability. - Initiate applied research in battery development under Issue 54112 "Expand the Industrial Base for Battery Development". Design Science, includes the following: - High Fidelity Systems Physics - Systems Complexity Engineering - Virtual Design and Validation Modeling and Simulation - Complex Systems Engineering and Architecture - Digital Engineering for Naval Systems - Continue applied research in hydrodynamics of surface and subsurface platforms and propulsion focusing on the prediction of innovative propulsion concepts and platform designs that improve control of dynamic behaviors					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
to improve efficiency, speed, maintainability, and maneuverability, while reducing overall associated platform signatures, weight, and lifecycle cost. - Continue efforts in enhanced high-fidelity physics modeling and simulation capabilities for high displacement shock events, to improve predictive capabilities and improve design tools and guidance - Continue development of high-fidelity physics and generalized wave propagation modeling efforts in the electromagnetic spectrum, targeting improved tools for assessing platform and system electromagnetic signatures Integrated Cyber-Physical Technologies, includes the following: - Artificial Intelligent Platforms - Morphing and Reconfigurable Systems - Collaborative Platforms - Crewed/Uncrewed Platform Controls and Automation - Continue efforts in applied research of crewed platform autonomous systems to improve warfighter efficiency, damage control, and adaptability in uncertain conditions. -Continue efforts autonomous surface (USV) and undersea platforms (UUV) focusing on the resilience of systems and system of systems for extended time between needed human intervention to extend range, time on station, signature reduction, and adaptability. -Continue efforts in morphing reconfigurable autonomous systems technologies to create efficient adaptable modular autonomous systems. Resilient Naval System Technologies, includes the following: - System Vulnerability Technologies - System Susceptibility Technologies - Recoverable Systems Technologies - Extensible Resilient Technologies - Advanced Maneuver and Propulsion - Complete development of high-fidelity physics and generalized wave propagation modeling efforts in the electromagnetic spectrum, targeting improved tools for assessing platform and system electromagnetic signatures -Complete Machinery Autonomy applied research					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Complete applied research into Structural Reliability Technologies - Continue applied research into Wave Transport Technologies general acoustic and electromagnetic signature prediction tools for ground, sea-surface, and subsurface platforms. - Continue research efforts in support of on the Tactical Submarine Evolution Plan (TSEP) S&T, Submarine Detectability, Integrated Permanent Magnet Motors, and Submarine Future Technologies. - Continue research on broad based countermeasures and signature improvement technologies associated with Non-Acoustic Undersea Warfare. - Continue applied research program on Total Platform Vulnerability that seeks to improve the resiliency and extensibility of complex platforms and systems of systems throughout their lifecycle. - Continue efforts in applied research of manned platform autonomous systems, as well as autonomous surface (USV) and undersea platforms (UUV) focusing on the Resiliency of systems and system of systems for extended time between needed human intervention to extend range, time on station, signature reduction, warfighter efficiency, damage control, and adaptability in uncertain adversarial battlespaces. - Continue efforts in applied research of crewed platform autonomous systems to improve warfighter efficiency, damage control, and adaptability in uncertain conditions. - Continue applied research in Wave Transport Technologies to reduce exploitable electromagnetic, optical, and infrared signatures from naval systems. - Continue applied efforts in unique effects of arctic conditions upon surface ship signatures - Continue efforts in applied Digital Twin technologies to specific creating robust self-repairing cyber-physical systems - Continue efforts in applied research into Coupled Hydrodynamics and Structural Acoustics to reduce radiated signatures - Continue efforts in Innovative Structural technologies for new modular low susceptibility structures for naval systems - Continue efforts in applied research into Digital Engineering Frameworks for advanced platform design - Initiate Platform and Propulsor Hydrodynamics applied research aimed at propulsor and platform efficient technologies and wholistic system optimization Spectrum Superiority: - Continue research efforts for passive and active long-range high-resolution detection and imaging for increased survivability and situational awareness even in degraded/contested environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research efforts into coherent combination of optical, infrared, and mm-wave imagers for increased resolution and longer-range detection. - Continue research efforts into alternative imaging modalities (spectral, temporal, polarization, event-based/ neuromorphic) to improve target acquisition. - Initiate research efforts into alternative focal plane array architectures (2.5D, 3D, tiled chiplet). - Continue efforts in Power and Energy Technology. Power and energy are central to modern warfare. Increased speed and endurance, and advanced weapons systems will strain power systems of all sizes from surface combatants to expeditionary base micro-grids, to devices smaller than handhelds. Consequently, efforts conducted in this thrust are aimed at enabling increasingly efficient, reliable, resilient, and abundant energy for Navy and Marine Corps infrastructure, platforms, systems, and equipment through optimization of power and energy density, energy efficiency, service life, reliability, low maintenance operation, safety, and cost. Power and energy generation and storage requirements often dictate the ultimate capabilities of naval systems and must do so reliably in extreme environments to meet the naval forces' needs. Low-maintenance, reliable power and energy solutions will enable longer missions. Operating, sustaining, and increasing the lethality of modern platforms and systems requires a focus on power and energy technologies. To achieve these objectives, this thrust encompasses research in materials for advanced naval platform and expeditionary power generation, distribution, and management. - Continue the development of Power Electronics Technologies. The objective of this area is to increase the power density, reduce the volume, and reduce the weight of power converters, pulsed power components, and systems for applications. Those systems include but are not limited to electric propulsion for surface ships and submarines; power distribution on Navy ships and aircraft; powering weapons and sensors; and force protection. Solutions emphasizing efficiency and compactness are emphasized in order to address prime power constraints imposed on both large platforms and distributed autonomous systems operating solely or in a swarm environment. This is an expansion of the previous mentioned efforts to develop and explore new high voltage, high efficiency wide bandgap and ultra-wide bandgap power switches for electric propulsion and electric weapons as well as an expansion of the previous mentioned efforts to research High-Voltage Planar Low Damage GaN Power Switches. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602123N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and naval priorities.					
Title: Naval Research Enterprise ***Description:*** The Independent Applied Research (IAR) Program focuses on solving a wide range of Naval Science and Technology (S&T) fleet issues utilizing unique Naval Warfare Center (WC) laboratory capabilities. Efforts under this activity address the full spectrum of the Naval Research and Development Framework using focus areas which engage Naval aviation, sea surface, undersea, space, weapons, communication, information, and human systems. The IAR Program provides participating WCs with in-house funding for applied research to support the execution of their assigned missions by: (1) developing and maintaining a cadre of active researchers who can distill and extend results from worldwide research and apply them to solve Naval problems; (2) promoting the hiring and development of talented new scientists and engineers (S&E) with the assurance of proper mentoring with senior personnel; and (3) encouraging collaboration with universities, private industry, and other Navy and Department of War laboratories. Funded projects are chosen through rigorous internal competition and typically last two to three years. IAR projects are generally designed to promote investment in high-risk/high- payoff research and also allow young S&Es to manage Navy relevant research projects. ***FY 2026 Plans:*** - Continue three-year projects selected in FY2025 to further develop and maintain the Science and Engineering workforce by providing funding to Naval Warfare Centers and Laboratories to foster high risk/ high reward applied research initiatives of Naval interest. Each Naval site conducts peer reviews for existing research projects, assess the quality of the research, and determine if projects should continue. - Complete the three-year FY 2024 projects and two-year FY 2025 projects. Assess opportunities for technology transition to larger programs through coordination with various resource sponsors. Transfer successful efforts to research, development, test, and evaluation-sponsored programs. - Continue new efforts in FY 2026 at the participating warfare centers or laboratories to generate new two-year and three-year research topics where priority is given to warfighter needs, technology alignment, high quality	9.420	12.044	12.593	0.000	12.593

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
research, and recruitment and retention of outstanding scientists and engineers. Topics cover a broad range of Naval relevant research areas critical to the support of warfare center and laboratory missions. ***FY 2027 Base Plans:*** - Continue three-year projects selected in FY2026 to further develop and maintain the Science and Engineering workforce by providing funding to Naval Warfare Centers and Laboratories to foster high risk/ high reward applied research initiatives of Naval interest. Each Naval site conducts peer reviews for existing research projects, assess the quality of the research, and determine if projects should continue. - Complete the three-year FY 2025 projects and two-year FY 2026 projects. Assess opportunities for technology transition to larger programs through coordination with resource sponsors. Transfer successful efforts to research, development, test, and evaluation-sponsored programs. Assess opportunities for recruitment and retention of outstanding scientists and engineers. - Initiate new efforts at the participating warfare centers or laboratories to generate new two- and three-year research initiatives strictly focused on utilizing Navy S&T funding exclusively for high-quality research that directly aligns with naval technology roadmaps and focus areas, in support to the critical missions of our warfare centers and laboratories for the Navy. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is to expand the number of scientists and engineers conducting naval-relevant research efforts at warfare centers and laboratories across the Naval Research and Development Establishment (NR&DE). Efforts will focus on warfighter needs, technology transition, and delivering these game changing technologies to our sailors and marines, providing opportunities for the recruitment and retention of outstanding scientists and engineers within the Navy.					
Accomplishments/Planned Programs Subtotals	113.410	125.699	127.065	0.000	127.065

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 0000 / *Force Protection Applied Res*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602123N / *Force Protection Applied Res*	Project (Number/Name) 1510 / *Expeditionary Campaign*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1510: *Expeditionary Campaign*	0.000	0.000	0.000	10.714	-	10.714	12.166	12.391	12.647	12.851	Continuing	Continuing

Note

Investments in Project 1510 Expeditionary Campaign were previously funded in this same PE 0602123N under the Surface Ship and Submarine Hull Mechanical and Electrical (HM&E) planned programs in Project 0000. This new Project was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

This project addresses applied research associated with providing the capability of Platform and Force Protection for Expeditionary Forces. It supports the development of technologies associated with all naval platforms (surface, subsurface, terrestrial, and air) and the protection of those platforms. Research is focused on providing technologically superior defense of naval assets and delivering warfighting capabilities at reduced total ownership costs for surface and subsurface platforms through investments in applied research in Power, Energy, Propulsion, Engineering, and Design. This project develops technologies for reducing detectable signatures, while enhancing the mission effectiveness of naval platforms (surface, subsurface, terrestrial, and air) through improvements in platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. The project addresses technology development that provides substantial performance improvements in energetic material systems and subsystems, while addressing safety, reliability, and affordability concerns.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Force Protection	0.000	0.000	10.714	0.000	10.714
Description: This activity investigates new ways and means to protect forces and materiel across all domain threats in all operational settings, from contested maritime, air, and land domains, to include complex urban environments. The portfolio protects against adversaries' challenges such as guided-rockets and missiles, mobile coastal artillery, threat electronic warfare, and counter intelligence, surveillance and reconnaissance, and waterborne threats from ports, harbors, and in the littorals. Mines and obstacles, both in the water and ashore, also complicate amphibious operations. The activity invests in vehicle survivability aspects that are exacerbated due to size, weight, power, and cost constraints inherent to Expeditionary operations and the harsh nature of maritime environments.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: Explosive Hazard Defeat in Expeditionary Warfare:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue: - Design and development of modular compact sensors and automated algorithms to rapidly assess, analyze, and report damage to infrastructure for repair following an attack or natural disaster particularly damage to runways, roads, piers, utilities, and buildings. - Research to design, development and prototyping scalable precision neutralization systems for threat explosive hazards, mines, and kill chain components with lethal or non-lethal force from standoff distances to enable in-stride littoral movement and maneuver, designated ground corridors, at forward aviation points, littoral transition points, and in designated areas of interest. - Develop lightweight expendable munitions deployed from unmanned aerial systems to spot neutralize explosive hazards. Includes autonomous hazard identification, continually tracks, and maneuvers a warhead to the target to be neutralized. - Applied research of a fluorescence based scanning sensor to detect explosive hazards under turbid water condition. - Research to enhance the sensing of a small unmanned system capable of operating underwater and in the air to support finding and reacquiring explosive targets in expeditionary environments. This uses artificial intelligence techniques and pushes near-real time data into the common operating picture. - Demonstrate a compact, solid-state, fully integrated polarimetric light detection and ranging sensor for a small unmanned aerial system with quad-polarization, demultiplexing metasurfaces, and mutipixel time of flight single photon-counting array. - Research design and development of electronics for sensors and communications for multi-domain small unmanned aerial system that can reach underwater locations rapidly and provide bathymetry, detection, interrogation, neutralization and communications capabilities for the defeat of explosive hazards and other landing obstacles from the very shallow waterzone to the inland objective. Complete: - Development of compact detection flow cells for explosives. - Research to forward the timely information coming from new expeditionary antisubmarine warfare sensors with in-situ processing in the noisy littorals into the undersea warfare common operational picture. - Research into optimized communications in the littoral environment using operational forecast models and coastal/ terrestrial radio frequency propagation characteristics validated through field tests.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to a realignment of funds from the same PE 0602123N under the Surface Ship and Submarine Hull Mechanical and Electrical (HM&E) planned programs of Project 0000 Force Protection Applied Research.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	10.714	0.000	10.714

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602123N / *Force Protection Applied Res*	Project (Number/Name) 3270 / *Sec. 2912 Operational Energy Savings*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3270: *Sec. 2912 Operational Energy Savings*	0.000	1.200	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.200

Note

Operational Energy Savings

A. Mission Description and Budget Item Justification

This project addresses applied research associated with providing the capability of Platform and Force Protection for the U.S. Navy. It supports the development of technologies associated with all naval platforms (surface, subsurface, terrestrial, and air). Research is focused on providing technologically superior defense of naval assets and delivering warfighting capabilities at reduced total ownership costs for surface and subsurface platforms through investments in applied research in Power and Energy.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Operational Energy Savings	1.200	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	1.200	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602123N / *Force Protection Applied Res*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	68.540	117.387	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	185.927

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Underwater Electromagnetic Theory and Ocean Hydrod ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research for Underwater Electromagnetic Theory and Ocean Hydrodynamics	0.000	9.266
Congressional Add: Advanced Manufacturing of Unmanned Maritime System ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research on Advanced Manufacturing of Unmanned Maritime System	0.000	4.827
Congressional Add: Advanced Power Distribution Systems for Future Nav ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research for Advanced Power Distribution Systems for Future Naval Platforms	0.000	4.827
Congressional Add: Characterization of High-Performance Carbon Fiber ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research on Characterization of High-Performance Carbon Fiber	0.000	3.379
Congressional Add: High-Performance Coatings and Materials ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research on High-Performance Coatings and Materials	0.000	2.896
Congressional Add: Launch and Refueling for Small USV ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Research on Launch and Refueling for Small USV	0.000	2.896
Congressional Add: Microgrid Demonstration for Costal Facilities	0.000	1.931

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Research on Microgrid Demonstration for Costal Facilities		
Congressional Add: Multifunctional Composite Structures for Naval Shi	0.000	4.827
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Research on Multifunctional Composite Structures for Naval Ships and Systems		
Congressional Add: Multi-Material Flexible Automated Manufacturing	0.000	3.861
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Research on Multi-Material Flexible Automated Manufacturing		
Congressional Add: UAS Degraded Environment Facility	0.000	7.723
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Research on UAS Degraded Environment Facility		
Congressional Add: Additive manufacturing for bonded metal matrix com	4.827	7.723
FY 2025 Accomplishments: Finalize NAVSEA acceptance of bonded metal-matrix (BMR) selection guide using phase III data and predictions, conduct a BMR shipboard demonstration, and initiate development of advanced UAM production and process controls for structural reinforcement. Program Tasks: Validate bonded metal-matrix (BMR) numerical predictions against test data Support NAVSEA technical warrant holder approval of BMR for structural repair Develop BMR configuration toolkit Perform shipboard BMR installation and demonstration on a Navy ship or assets Advance UAM production capabilities to include wider tape and more complex shapes		

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Determine process controls and develop quality assurance data for the UAM process ***FY 2026 Plans:*** Research on Additive manufacturing for bonded metal matrix composites		
Congressional Add: Alternative energy search ***FY 2025 Accomplishments:*** Continue to implement programs for identifying, testing, evaluating and deploying energy and other technologies that are of interest to the Navy and national security in the INDO/PACOM AOR. Characterize demand response to support grid stability, resiliency and security and to inform Navy grids and microgrids. Continue to conduct energy system assessments and provide recommendations and implementation plans based on the specific requirements or needs of the targeted INDO/PACOM AOR (Asia-Pacific and Arctic regions). Continue Hawaii-Alaska energy technology collaboration to accelerate increased energy independence? across the INDO/PACOM AOR ***FY 2026 Plans:*** Continue: to implement programs for identifying, testing, evaluating and deploying energy and other technologies that are of interest to the Navy and national security in the INDO/PACOM AOR. Continue: Characterize demand response to support grid stability, resiliency and security and to inform Navy grids and microgrids. Continue: to conduct energy system assessments and provide recommendations and implementation plans based on the specific requirements or needs of the targeted INDO/PACOM AOR (Asia-Pacific and Arctic regions). Continue: Hawaii-Alaska energy technology collaboration to accelerate increased energy independence? across the INDO/PACOM AOR	24.134	28.961
Congressional Add: Emerging Robotic Advanced Manufacturing Technology ***FY 2025 Accomplishments:*** - Develop advanced manufacturing capability to reduce the time between conceptualization and fielding of new vessels and platforms.	2.413	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
- Provide the ability to quickly design, manufacture, and deliver these platforms through an increase in capability with less-expensive platforms. ***FY 2026 Plans:*** N/A		
Congressional Add: Intelligent Data Management for Distributred Platf ***FY 2025 Accomplishments:*** Expand reinforcement learning based missing coordination frameworks to enable real time decision making and adaptive control across distributed uncrewed maritime systems. Build and evaluate communication topology tailored to Navy mission profiled to support scalable coordination in contested bandwidth limited environments. Develop and test distributed battlespace oracles that autonomously respond to environmental changes, operational threat, and mission updates without human input. ***FY 2026 Plans:*** Continue: Research on Intelligent Data Management for Distributed Platforms	4.827	12.067
Congressional Add: Stealth Engineering Automation ***FY 2025 Accomplishments:*** The Focus is on developing integrated models of selected vessel signatures to advance own-ship awareness of signature status. Develop signature prediction and abatement methodologies. ***FY 2026 Plans:*** Continue: Developing integrated models of selected vessel signatures to advance own-ship awareness of signature status. Continue: Developing signature prediction and abatement methodologies.	7.723	8.688
Congressional Add: University-based Advanced Materials and Manufactur ***FY 2025 Accomplishments:*** Identify and develop new materials suitable for additive manufacturing applications Develop new additive manufacturing process and procedures Develop additive manufactured parts qualification procedures and metrics	4.827	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Develop computational tools for materials discovery and rapid testing ***FY 2026 Plans:*** N/A		
Congressional Add: Precision AI Enabled Naval Supply Chain Logistics ***FY 2025 Accomplishments:*** Precision AI Enabled Naval Supply Chain Logistics ***FY 2026 Plans:*** Continue: Research on Precision AI Enabled Naval Supply Chain Logistics	5.792	5.792
Congressional Add: Talent and technology for Navy power and energy systems ***FY 2025 Accomplishments:*** Continue all efforts less noted as completed. Continue to develop autonomous command and control of ship power and energy systems, leveraging digital twin technology that protects the ship's power and energy grid. Continue to Modify and extend decision aid tools to function as an artificially intelligent (AI) "chief engineer" for use in manned and unmanned vessels Continue to Exploit historical data captured by digital twins and develop efficient computing methods for digital twins Continue to Investigate improved energy management through development of wirelessly distributed, platform-agnostic, advanced component-level digital twins (DT) for batteries, converters, and thermal modeling Continue Advance the state-of-the-art in battery energy storage systems through novel sensing techniques, control methods, recycling strategies, and fabrication and testing methods ***FY 2026 Plans:*** Continue to develop autonomous command and control of ship power and energy systems, leveraging digital twin technology that protects the ship's power and energy grid. Continue to Modify and extend decision aid tools to function as an artificially intelligent (AI) "chief engineer" for use in manned and unmanned vessels Continue to Exploit historical data captured by digital twins and develop efficient computing methods for digital twins	4.827	7.723

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Continue to Investigate improved energy management through development of wirelessly distributed, platform-agnostic, advanced component-level digital twins (DT) for batteries, converters, and thermal modeling Continue Advance the state-of-the-art in battery energy storage systems through novel sensing techniques, control methods, recycling strategies, and fabrication and testing methods		
Congressional Add: Resilient innovative sustainable economies via university partnerships ***FY 2025 Accomplishments:*** Develop innovative solutions to technical challenges in the energy and maritime industries and through the development of dual use technologies. Universities focus on four pillars: problem-solving training to acquire innovation skill, expanding the entrepreneurial mindset in training and research, identifying pathways to maturing patented IP at the universities to commercial products and supporting innovators to conceive and develop dual-use, defense-ready technologies for the INDOPACOM and Arctic regions ***FY 2026 Plans:*** N/A	6.757	0.000
Congressional Add: Multi-material flexible automated manufacturing ***FY 2025 Accomplishments:*** Continue to Establish new large-scale metal and composites hybrid manufacturing technologies to enable the rapid, low-cost manufacture of metal items such as castings and forgings for DOW programs. Continue development of multi-material flexible automated manufacturing and processes for advance manufacturing. Continue Major research focus areas are process planning; high precision manipulation over large volumes, scaling productivity and materials verification. ***FY 2026 Plans:*** N/A	2.413	0.000
Congressional Adds Subtotals	68.540	117.387

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602123N / *Force Protection Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602131M *I Marine Corps Lndg Force Tech*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	56.730	62.108	57.567	-	57.567	54.582	60.827	61.353	62.762	Continuing	Continuing
2958: *Cyberspace Activities*	0.000	5.046	5.306	5.412	-	5.412	5.562	5.616	5.697	5.795	Continuing	Continuing
3001: *Marine Corps Landing Force Tech*	0.000	47.099	40.391	52.155	-	52.155	49.020	55.211	55.656	56.967	Continuing	Continuing
9999: *Congressional Adds*	0.000	4.585	16.411	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	20.996

A. Mission Description and Budget Item Justification

The U.S. Navy/Marine Corps team is the most potent naval fighting force in the world. Fundamental to their success are the technologies necessary for effective distributed maritime operations. The Office of Naval Research (ONR) combines knowledge of the naval mission with researchers to select and explore solutions critical to expeditionary warfighting needs.

This Program Element (PE) addresses requirements outlined in the Expeditionary Advanced Base Operations (EABO), which is a form of expeditionary warfare that involves the employment of mobile, reduced signature, operationally relevant, and relatively easy to maintain and sustain naval expeditionary forces from a series of austere, temporary locations ashore or inshore within a contested or potentially contested maritime area in order to conduct sea denial, support sea control, or enable fleet sustainment. Additionally, USMC forces must be ready for worldwide contingency operations, which frequently includes contested urban environments with complex physical and operational challenges. This can include physical compartmentalization and canalization, additional physical dimensions (subterranean and multi-story structures), crowded conditions and associated threat obscuration, communications challenges, informational and human aspects, and proliferation of observation and fires technologies. These operating environments require capabilities addressing all the activities within this PE and while it provides many challenges, unique opportunities are also presented and can further shape technology approaches.

These future challenges and portents demand robust technologies for the Marine Corps, but the technology options are constrained. They must have a lightweight deployable character, and the ability to operate in austere conditions with little fixed infrastructure or support while retaining the agility and lethality of an integrated maneuver force. Technology must provide full spectrum capability against robust and complex peer and near-peer adversaries while meeting size, weight, power, cost limitations, and command and control systems that work within degraded, disconnected, intermittent and limited environments with reduced threat detectability.

The approach within this PE encompasses ideas that support both revolutionary and evolutionary capabilities, and in this way considers and balances both "push" and "pull" aspects of technology projects.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602131M *I Marine Corps Lndg Force Tech*

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	58.508	45.697	59.628	-	59.628
Current President's Budget	56.730	62.108	57.567	-	57.567
Total Adjustments	-1.778	16.411	-2.061	-	-2.061
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.589			
• Congressional Rescissions	-	-			
• Congressional Adds	-	17.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.778	0.000			
• Program Adjustments	0.000	0.000	-2.061	-	-2.061
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Silicon Anode-Based Lithium-Ion Batteries Research*	0.000	4.827
Congressional Add: *unmanned logistics solutions*	4.585	11.584
Congressional Add Subtotals for Project: 9999	4.585	16.411
Congressional Add Totals for all Projects	4.585	16.411

Change Summary Explanation

Funding: FY 2027 funding decrease of $2.061M reflects a decrease in funding in the Marine Corps Lndg Force Tech and a strategic realignment of resources to address higher Department of the Navy (DON) priorities, as well as the completion of various experimentation and development efforts.

Technical: N/A

Schedule: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602131M / *Marine Corps Lndg Force Tech*	Project (Number/Name) 2958 / *Cyberspace Activities*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2958: *Cyberspace Activities*	0.000	5.046	5.306	5.412	-	5.412	5.562	5.616	5.697	5.795	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Project activity provides freedom of maneuver and influence in the cyber-electronic warfare domain while simultaneously denying the same to the adversary and protecting critical command systems. Technologies are being developed using a multi-disciplinary approach that combines radio frequency electronics, digital signal processing, computer engineering, software engineering, machine learning and data science to support Naval Expeditionary Forces operating with size, weight, and power constrained equipment in denied, degraded, intermittent, or limited (DDIL) communications environments. Areas of applied research include distributed precision time, predictive software defined radio architectures, coordinated cyber and spectrum maneuver to mitigate detection and exploitation, tactical cyber visualization, discovering and mapping networks in dense urban environments, contextual awareness and blind channel characterization.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Cyber	5.046	5.306	5.412	0.000	5.412
Description: This activity provides freedom of maneuver and influence in the cyber-electronic warfare domain while simultaneously denying the same to the adversary and protecting critical command systems. Technologies are being developed using a multi-disciplinary approach that combines Radio Frequency electronics, digital signal processing, computer engineering, software engineering, machine learning and data science to support Naval Expeditionary warfighters operating with size, weight and power constrained equipment in denied, degraded, intermittent, or limited (DDIL) communications. Areas of applied research include distributed precision time, predictive software defined radio architectures, coordinated cyber and spectrum maneuver to mitigate detection and exploitation, tactical cyber visualization, discovering and mapping networks in dense urban environments, contextual awareness and blind channel characterization.					
FY 2026 Plans: - Continue to develop tools and algorithms for Cyber-EW (Electronic Warfare) capabilities for tactical engagement. - Continue research to identify cyber threats (cyber health assessments) including vulnerability research of ubiquitous embedded systems focusing on devices commonly carried by Marines - Continue research of low Size, Weight and Power (SWAP) cyber secure technologies that when integrated into a single platform will enable dismounted Marines to conduct Cyber-EW missions in a highly responsive, dynamically reprogrammable and modular standards-based configuration. - Continue research development of distributed mission planning with multi-security enclaves on tactical Cyber-EW systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 2958 / *Cyberspace Activities*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into novel techniques for the exploitation of information technology devices for warfighting utilization by distributed forces. - Complete to develop a generic microprocessor fuzzer for firmware on embedded devices that can be extended to legacy Naval systems. - Complete development of automated binary analysis tool that can attribute features from malware campaigns. - Complete the development of fuzzing techniques designed for components located within the RF chain. - Initiate research to develop cyber enabled platforms that enable non-specialist warfighters to more rapidly identify, profile and act without requiring extensive cyber training. ***FY 2027 Base Plans:*** Continue: - Research to develop tools and algorithms for Cyber-EW (Electronic Warfare) capabilities for tactical engagement. - Research to identify cyber threats (cyber health assessments) including vulnerability research of ubiquitous embedded systems focusing on devices commonly carried by Marines. - Advanced development research of low size, weight and power (SWAP) cyber secure technologies that when integrated into a single platform will enable dismounted Marines to conduct Cyber-EW missions in a highly responsive, dynamically reprogrammable and modular standards-based configuration. - Research development of distributed mission planning with multi-security enclaves on tactical Cyber-EW systems. - Research into novel techniques for the exploitation of information technology devices for warfighting utilization by distributed forces. - To develop cyber enabled platforms that enable non-specialist warfighters to more rapidly identify, profile and act without requiring extensive cyber training. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Accomplishments/Planned Programs Subtotals	5.046	5.306	5.412	0.000	5.412

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 2958 / *Cyberspace Activities*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602131M / *Marine Corps Lndg Force Tech*	Project (Number/Name) 3001 / *Marine Corps Landing Force Tech*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3001: *Marine Corps Landing Force Tech*	0.000	47.099	40.391	52.155	-	52.155	49.020	55.211	55.656	56.967	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project funds applied research; technology assessment, road mapping, and concept development; and less technologically mature projects within the Future Naval Capability (FNC) process as means to inform, enhance, enable, and invent future concepts and capabilities with new Science and Technology (S&T). This project is organized into ten activities, the core of which is represented by the eight Expeditionary Warfighting Capability Areas.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Command, Control, Communications, and Computers (C4)	6.451	5.851	3.000	0.000	3.000
Description: This activity investigates robust, resilient, and secure networked communications pathways and capability that support an expeditionary force's distributed and disaggregated operations. Research supports both networked and local computation for communications that exploits the expeditionary forces close physical proximity to threats while mitigating deficits commiserate within denied, degraded, intermittent, or limited (DDIL) communications environments. Expeditionary forces must operate in the cyber domain and in addition to defending communications networks, vehicles, and weapons systems, are reliant on electronic controllers for basic operations and as such are susceptible to cyber attacks. Technologies addressed within this activity include secure, robust, self-forming, mobile communications networks; distributed computing to support information dissemination to all echelons; improved capabilities in over-the-horizon, beyond line-of-sight, and restricted environment communications and sensors; and software and data processing to support formation of an appropriate common picture. Other efforts include power management, low detectability, conforming to size, weight, power, cost constraints, and interoperability within the joint environment. ***FY 2026 Plans:*** - Continue research effort into distributed electronic warfare technologies against advanced threats by relocatable ground systems. - Complete development of survivable kinetic weapon initiation and guidance technologies able to operate in contested electromagnetic environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research to design a mobile, distributed, and coordinated Electronic Warfare (EW) defense system, via Space Time Adaptive Response, capable of providing scalable countermeasure solution against multiple airborne threats. - Initiate the development of AI-enabled Command, Control and Communications (C3) for planning, distribution, reaction and recovery of autonomous assets used in Enhanced Maneuver, Force Protection, and Intelligence, Surveillance and Reconnaissance (ISR) roles for Expeditionary Advanced Base Operations (EABO) support. - Initiate the development of AI-enabled Tactical Advisors for small (company and below) units that can analyze sparse information and predicting/recommending tactically sound Courses of Action (COAs). ***FY 2027 Base Plans:*** Continue: - Research to design a mobile, distributed, and coordinated Electronic Warfare (EW) defense system, via Space Time Adaptive Response, capable of providing scalable countermeasure solution against multiple airborne threats. - The development of AI-enabled Command, Control and Communications (C3) for planning, distribution, reaction and recovery of autonomous assets used in Enhanced Maneuver, Force Protection, and Intelligence, Surveillance and Reconnaissance (ISR) roles for Expeditionary Advanced Base Operations (EABO) support. There is an increased investments in this effort. - The development of AI-enabled Tactical Advisors for small (company and below) units that can analyze sparse information and predicting/recommending tactically sound Courses of Action (COAs). Complete: - Research effort into distributed electronic warfare technologies against advanced threats by relocatable ground systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the completion of research effort into distributed electronic warfare technologies against advanced threats by relocatable ground systems.					
Title: Firepower ***Description:*** The activity investigates a large variety of weapons technologies to enhance fires capabilities of Fleet Marine Forces as part of joint maritime campaigns to counter emerging threats and create new	5.390	6.373	7.400	0.000	7.400

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
opportunities for the joint force to secure operational advantage. Research efforts increase range, lethality, and capacity, while maintaining mobility and tempo to operate inside actively contested maritime domains, to achieve overmatch fires capabilities when operating within the landward portions of the littorals, and to provide weapons system capabilities able to persist when operating within the adversary's intelligence, surveillance, collection, and weapons ranges. The focus on low size, weight, power, and cost of weapons components and weapon systems, having low manpower and cognitive burdens to operate, with low logistics burdens, stresses technical solutions. Weapons system technologies being developed include fire control, launch and propulsion, precision guidance, navigation, and control, seekers, fuzing, and lethality. ***FY 2026 Plans:*** - Continue research effort to analyze end-to-end navigation technology developments for Global Positioning System (GPS) absent conditions, suitable for shaping trajectories of extended range, precision guided munitions in satellite and network-denied environments. - Continue research into real-time, multi-spectral target detection and identification technologies for expanded applications to weapons optics, aviation targeting and navigation sensors, unmanned aircraft systems, missile seekers, and naval platforms, to improve anomaly and object detection during degraded visibility and long-range day and night situations, and to improve fire-and-forget logic algorithms. - Continue research and experimentation test series investigating the minimum explosive quantity needed to provide a prompt reaction in a cylindrical equivalent of small munition form factor, including formulation mix/cast/cure and hardware build. - Continue developmental research to validated simulations for effect of casing on formulation reaction regime and performance. - Continue experimental test series for case effects on performance including formulation mix/cast/cure and hardware build. - Continue development of extended range, high lethality area effects munitions that combine state of the art, high performance, low cost seeker and warhead technology. - Initiate research and development of high energy reactive metal formulations for incorporation as structural components that add lethal effects in munition platforms. ***FY 2027 Base Plans:*** Continue:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research effort to analyze end-to-end navigation technology developments for Global Positioning System (GPS) absent conditions, suitable for shaping trajectories of extended range, precision guided munitions in satellite and network-denied environments. - Research into real-time, multi-spectral target detection and identification technologies for expanded applications to weapons optics, aviation targeting and navigation sensors, unmanned aircraft systems, missile seekers, and naval platforms, to improve anomaly and object detection during degraded visibility and long-range day and night situations, and to improve fire-and-forget logic algorithms. - Research and experimentation test series investigating the minimum explosive quantity needed to provide a prompt reaction in a cylindrical equivalent of small munition form factor, including formulation mix/cast/cure and hardware build. - Developmental research to validated simulations for effect of casing on formulation reaction regime and performance. - Experimental test series for case effects on performance including formulation mix/cast/cure and hardware build. Complete: - Research and development of high energy reactive metal formulations for incorporation as structural components that add lethal effects in munition platforms. - Development of extended range, high lethality area effects munitions that combine state of the art, high performance, low cost seeker and warhead technology. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to increased investments in research to analyze end-to-end navigation technology developments for GPS absent conditions, suitable for shaping trajectories of extended range, precision guided munitions in satellite and network-denied environments.					
Title: Force Protection ***Description:*** This activity investigates new ways and means to protect forces and materiel across all domain threats in all operational settings, from contested maritime, air, and land domains, to include complex urban environments. The portfolio protects against adversaries' challenges such as guided-rockets and missiles, mobile coastal artillery, threat electronic warfare, and counter intelligence, surveillance and reconnaissance, and	6.043	5.890	7.492	0.000	7.492

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
waterborne threats from ports, harbors, and in the littorals. Mines and obstacles, both in the water and ashore, also complicate amphibious operations. The activity invests in vehicle survivability aspects that are exacerbated due to size, weight, power, and cost constraints inherent to Marine Corps operations and the harsh nature of maritime environments. Technologies addressed can include lightweight armor for ballistic and underbody blast protection, advanced sensors for counter tactical surveillance, active protection, signature management, and exploration of expeditionary undersea warfare capabilities. This activity also considers technology for payloads, packages and sensors that are needed by amphibious vehicles (both manned and unmanned) including mine counter measures; explosive hazard defeat systems; and obstacle and threat detection systems as well as technologies for improved protection for individuals against blast, ballistic and blunt impact threats. ***FY 2026 Plans:*** - Continue research in enabling technologies for countering unmanned aerial vehicles. This addresses both an increase in number and sophistication of threat systems to include kinetic and/or controlled interceptors with a specific focus on countering UAV swarms and scalable/low-cost approaches. - Continue research to counter emerging threats to expeditionary forces from directed energy weapons, including High-Powered Microwave (HPM) source or High-Energy Laser (HEL) - Continue design and prototyping of a compact and affordable interceptor and seeker package for kinetic force protection, both afloat and ashore. - Continue research of relevant mine warfare technologies that support maritime terrain shaping and area denial. - Initiate research to develop AI-enabled small robotic partners for planning, surveilling, intercepting and assessing vessel interdiction, boarding and search, with options for full-spectrum force projection. ***FY 2027 Base Plans:*** Continue: - Research in enabling technologies for countering unmanned aerial vehicles. This addresses both an increase in number and sophistication of threat systems to include kinetic and/or controlled interceptors with a specific focus on countering UAV swarms and scalable/low-cost approaches. - Research to counter emerging threats to expeditionary forces from directed energy weapons, including High-Powered Microwave (HPM) source or High-Energy Laser (HEL). - Design and prototyping of a compact and affordable interceptor and seeker package for kinetic force protection, both afloat and ashore.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research of relevant mine warfare technologies that support maritime terrain shaping and area denial. - Research to develop AI-enabled small robotic partners for planning, surveilling, intercepting and assessing vessel interdiction, boarding and search, with options for full-spectrum force projection. There is an increased investment in this effort. Initiate: - Research effort to develop a data-driven, medically informed framework to enhance the lightweight performance of advanced personal protective capabilities for Marines, ensuring survivability against novel battlefield threats. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of an effort to develop a data-driven, medically informed framework to enhance the lightweight performance of advanced personal protective capabilities for Marines, ensuring survivability against novel battlefield threats.					
Title: Human Performance, Training and Education ***Description:*** This activity investigates two technology investment areas: warrior resilience, and decision-making and expertise development. Warrior resilience is focused on advanced training technologies and methodologies that enhance neural, cognitive, and physical readiness. Decision making and expertise development accelerates and improves the advancement in retention of skills in decision making, situation awareness, including individual and team adaptability and coordination on decentralized, dynamic and dispersed battlefields. ***FY 2026 Plans:*** - Continue algorithm development research using advanced analytics techniques to generate predictions and recommend actions to improve physical readiness and performance that incorporate passive collection of wearables data. - Continue research and design of applications that provide information to the warfighter and commanders at the tactical edge to mitigate negative aspects of combat and reduce negative consequences of sleep stressors to improve readiness and resilience. - Continue research focused on expanding and extending small unit leader assessment training and education to increase learning outcomes for the warfighter.	4.574	4.350	7.762	0.000	7.762

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development of realistic adversary and friendly agents to reduce the need for human control in constructive simulation training while maximizing training objectives. - Continue research effort to develop extended reality, synthetic agent(s), and training feedback technologies that provide realistic training, and assessment support to ensure Marines are trained effectively and are learning the right skills to meet Marine Corps requirements related to Training and Education 2030. - Continue to research mechanisms to improve warfighter resilience, operational readiness, and reduce early end of active service attrition. - Complete research on generalized approaches for adaptive training and assessment that minimizes content and curriculum development while improving learning outcomes and engagement. - Initiate research to develop portable Live, Virtual, and Constructive (LVC) kits that enable standalone or integrated training within a contested littoral or maritime operating environment for forward deployed units.					
FY 2027 Base Plans: Continue: - Algorithm development research using advanced analytics techniques to generate predictions and recommend actions to improve physical readiness and performance that incorporate passive collection of wearables data at scale with Marine Corps forces. - Research and design of applications that provide information to the warfighter and commanders at the tactical edge to mitigate negative aspects of combat and reduce negative consequences of sleep stressors to improve lethality, readiness and resilience. - Research focused on expanding and extending small unit leader assessment training and education to increase learning outcomes for the warfighter and technologies to support organization understanding of small unit training readiness. - Development of realistic adversary and friendly agents to reduce the need for human control and setup in virtual and constructive simulation training while maximizing pre-deployment training objectives. - Research effort to develop extended reality, synthetic agent(s), and training feedback technologies that provide realistic training, and assessment support to ensure Marines are trained effectively and are learning the right skills to meet Marine Corps requirements related to Training and Education 2030. There is an increased investment in this effort. - To research mechanisms and investigate scalable technologies to improve warfighter resilience, operational readiness, and reduce early end of active service attrition. - Research to develop portable Live, Virtual, and Constructive (LVC) kits that enable standalone or integrated training within a contested littoral or maritime operating environment for forward deployed units.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Initiate: - Modern Tactical Decision Games research development that leverage artificial intelligence for generating tactical vignettes that become progressively more advanced and tailored to warfighter's learning goals. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of an effort to leverage artificial intelligence for generating tactical vignettes that become progressively more advanced and tailored to warfighter's learning goals.					
Title: Intelligence, Surveillance, And Reconnaissance (ISR)	6.125	5.138	10.618	0.000	10.618
Description: This activity investigates enhanced situational awareness, persistent surveillance, and tactical decision making through automated analysis of data and rapid integration of information and acquired knowledge. Specific technologies in this activity effectively present actionable information to decision-makers, especially those at the lower command levels. This includes biometric monitoring for expeditionary operations, operational Course Of Action (COA) development, and autonomous surveillance in support of distributed operations. ***FY 2026 Plans:*** - Continue research efforts into advanced software frameworks that support human decision making at the tactical level during high tempo operations by integrating organic sensor data, incorporating faster than real-time military simulation, and conducting Artificial Intelligence (AI) and Machine Learning (ML) analysis to inform command decision making by inferring adversarial intent, plans, and tactics and providing reactive and adaptive planning and recommendations. - Continue research to provide augmented reality (AR) interfaces, multi-modal input methods, and communication aides to significantly improve Marines' situational awareness and speed the kill chain. - Continue the development of frameworks for intelligent signal processing resource allocation management on individual expeditionary platforms in real time. - Continue the development of dynamic range compression filters that enable wideband, high sensitivity reception to continue in the presence of uncooperative loud signals.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research to develop methods for the autonomous dispersing, monitoring and retrieval of large numbers small unmanned vehicles capable of providing visual, Radio Frequency (RF), and acoustic data for enhanced situational understanding in small unit (company and below) tactical operations.					
FY 2027 Base Plans: Continue: - Research efforts into advanced software frameworks that support human decision making and planning activities at the tactical and operational levels during high tempo operations by integrating organic sensor data, incorporating faster than real-time military simulation, and conducting Artificial Intelligence (AI) and Machine Learning (ML) analysis to inform command decision making by inferring adversarial intent, plans, and tactics and providing reactive and adaptive planning and recommendations. - Research to provide Augmented Reality (AR) Heads-up Display (HUD) interfaces, multi-modal input methods, and communication aides to significantly improve Marines' situational awareness and speed the kill chain for ground forces / infantry employment of fires activities. - The development of frameworks for intelligent signal processing resource allocation management on individual expeditionary platforms in real time. - Research to develop methods for the autonomous dispersing, monitoring and retrieval of large numbers of small, unmanned vehicles capable of providing visual, Radio Frequency (RF), and acoustic data for enhanced situational understanding in small unit (company and below) tactical operations. Complete: - The demonstration of dynamic range compression filters that enable wideband, high sensitivity reception to continue in the presence of uncooperative loud signals. Initiate: - Research to develop subsystem enhancements for ultra-wideband antennas, sensors, and photonic processing for passive detection of threats.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase in funding from FY 2026 to FY 2027 is due to the increased investments in research to prioritize new passive sensing technologies without radio frequency emissions.					
Title: USMC FNC Technology Candidates	6.266	6.512	6.630	0.000	6.630
Description: This R-2 Activity addresses the applied research associated with the Marine Corps' participation in the Department of the Navy's (DoN) Future Naval Capabilities (FNC) Program. The objective of the work in this Program Element (PE) is to develop and mature technologies needed by the Marine Corps to initiate FNCs in PE 0603640M Marine Corps Advanced Technology Development (ATD) that can be commenced at higher Technology Readiness Levels (TRLs). Investments in this activity are coordinated with similar and non-duplicative efforts in PE 0602750N Future Naval Capabilities Applied Research, where the Navy's participation in the FNC Program is funded. The FNC Program is structured to accelerate the transition of new technologies to the Fleet and Force. Each effort is assessed for its technology maturity and transition commitment. Funding for FNCs, which have Technology Readiness Levels (TRLs) of 4/5 to 6 and also have transition funding commitments from acquisition Programs of Record, are resourced in PE 0603640M Marine Corps Advanced Technology Development. Funding for technology candidates at lower TRLs (3 to 4) are resourced in this PE 0602131M, Marine Corps Landing Force Technology. ONR works closely with the Resource Sponsors and acquisition stakeholders to develop high priority technological capabilities needed by the operational forces. FNC Budget Activity (BA) 2 investments develop candidate FNC technologies in an agile fashion by exploiting technology advances that respond rapidly to naval needs. This approach facilitates an optimum response when developing and maturing the technology options that can be developed further in PE 0603640M Marine Corps Advanced Technology Development (ATD). The FNC Program favors a high level of collaboration. PE R-2 activities are mostly organized by the Office of Naval Research (ONR) Departments, which are tasked to collaborate with the acquisition stakeholders and their resource sponsors. A complete accounting of the technology candidates being developed and a full disposition of each technology development effort funded in this PE is provided annually to the Congressional oversight committees. ***FY 2026 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research and development of an improved infrared search and track prototype for expeditionary platforms using higher efficiency imaging techniques for passive situational awareness and identification of maritime targets. - Continue development of extended range, area effects munitions that combine state of the art seeker and warhead technology while reducing required munition salvo sizes. - Complete research effort to design artificial intelligence (AI) algorithms to inform and support command decision making by inferring adversarial intent, plans, and tactics from sensor data. - Initiate prototyping and development of novel signal processing schemes (in spatial, spectral, polarization, and other domains) to incorporate a passive, digital-pixel Focal Plan Array (FPA) Mid-Wave Infrared (MWIR) sensor technologies to autonomously execute detect-through-classify/ID workflow in support of Integrated Air & Missile Defense (IAMD). - Initiate research to develop Visual Integrated Tactical Logistics Battle Management Aid (VITL-BMA) investment to link a distribution plan to a ground transportation order. - Initiate research to develop mobile alternative sensing technologies.					
FY 2027 Base Plans: Continue: - Research to develop Visual Integrated Tactical Logistics Battle Management Aid (VITL-BMA) investment to link a distribution plan to a ground transportation order. - Research to develop mobile alternative sensing technologies. Complete: - Research and development of an improved infrared search and track prototype for expeditionary platforms using higher efficiency imaging techniques for passive situational awareness and identification of maritime targets. - Development of extended range, area effects munitions that combine state of the art seeker and warhead technology while reducing required munition salvo sizes. - Prototyping and development of novel signal processing schemes (in spatial, spectral, polarization, and other domains) to incorporate a passive, digital-pixel Focal Plan Array (FPA) Mid-Wave Infrared (MWIR) sensor technologies to autonomously execute detect-through-classify/ID workflow in support of Integrated Air & Missile Defense (IAMD). Initiate:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- The development of real-time mission planner application expeditionary forces to optimize employment of passive sensor networks. - Development of multi-modal (spectral, temporal, polarization) curved sensor for enhanced wide field of view situational awareness on expeditionary platforms in support of Expeditionary Advanced Base Operations (EABO). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Logistics	6.125	1.140	2.653	0.000	2.653
Description: This activity investigates the practical discipline and real world application of the deployment, sustainment, reconstitution, and re-deployment of forces engaged in expeditionary operations. Logistics replaces mass with assured knowledge and speed, is equally capable ashore or afloat in austere environments, and is fully scalable to meet uncertain requirements. This includes efficient and responsive force sustainment, planning and directing logistics operations, logistics demand reduction, fleet maintenance, and expeditionary energy. Expeditionary Energy enhances combat capability of expeditionary warfighters by increasing the efficiency and effectiveness of energy production, storage, distribution and use. Beyond traditional energy efforts, this portfolio also looks at other issues, including energy-efficient behaviors and hybridization of energy sources. These pillars are thoroughly integrated and perpetually related in execution. ***FY 2026 Plans:*** - Continue research towards de-risking future resilient energy ecosystems that will rely on hybridized hydrogen-based architectures that include hydrogen production, storage, and integration with renewable energy and batteries. - Continue applied research on scaling and prototyping next-generation energy storage, energy optimization, energy harvesting, and/or energy generation technologies. - Complete feasibility and scaling analysis of a bio-inspired subsurface resupply vessel. - Complete the development of mission planning tactical logistics analytic tools to integrate operational level logistics planning for Naval, Joint, and coalition forces across all classes of supply linked directly to operational requirements.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete analytic methodology that automatically links equipment and mission-driven sustainment requirements to task-organized units at foundational-level such as platoons. - Complete predictive analytics that provides dynamic demand forecasting while accounting for supply chain constraints. - Initiate research and development of mission planning tactical logistics predictive and analytic tools to aid in demonstration at fleet exercise. - Initiate effort to develop scalable, rapid manufacturing of Group 2 Unmanned Aircraft System (UAS) with blow molded airframe and hot-swappable core.					
FY 2027 Base Plans: Continue: - Research towards de-risking future resilient energy ecosystems that will rely on hybridized hydrogen-based architectures that include hydrogen production, storage, and integration with renewable energy and batteries. - Applied research on scaling and prototyping next-generation energy storage, energy optimization, energy harvesting, and/or energy generation technologies. - Effort to develop scalable, rapid manufacturing of Group 2 Unmanned Aircraft System (UAS) with blow molded airframe and hot-swappable core. Complete: - Research and development of mission planning tactical logistics predictive and analytic tools to aid in demonstration at fleet exercise. Initiate: - Development of a compact, man-portable thermophotovoltaic (TPV) power source to enhance the agility and lethality of dismounted expeditionary forces. - Research to develop a suite of intelligent, compact power conversion and management technologies to enable future resilient expeditionary power distribution needs in austere environments.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The increase in funding from FY 2026 to FY 2027 is due to the initiation of efforts to (1) develop a compact, man-portable TPV power source to enhance the agility and lethality of dismounted expeditionary forces. and (2)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
develop a suite of intelligent, compact power conversion and management technologies to enable future resilient expeditionary power distribution needs in austere environments.					
Title: Maneuver	4.900	3.887	5.100	0.000	5.100
Description: This activity investigates new ways and means to land forces and material through contested sea-land surface interfaces to then conduct maneuver warfare. In order to enable future Amphibious Operations, research efforts will support autonomous operations across the sea-surf-ground environment, enhanced speed and maneuverability of amphibious vehicles, amphibious vehicle technologies, water performance, and amphibious payloads to change the dynamics of a surface amphibious assault. This includes the emergence of manned-unmanned teaming and autonomous vehicle collaboration. The technologies included in this work address areas of mobility, materials, propulsion, signature reduction, modularity, and unmanned systems. ***FY 2026 Plans:*** - Continue research that will focus on intelligent mobility technologies to enable greater capability in harsh off road and littoral environments, with efforts including iterative predictive and adaptive mobility testing and demonstration. - Continue to research and study various technologies to improve off-road and littoral mobility and trafficability and to gain a better understanding of the vehicle-ground interface through terrain characterization and researching enhanced platform effectors that allow the system to adapt to varying terrain. - Continue effort to provide persistent unmanned hydrographic sensing for wide-area maritime situational awareness in support of Expeditionary Advanced Base Operations. - Continue effort to research technologies that enable more stable vehicle behaviors when operating amphibious platforms within the surf zone during high surf conditions. - Complete research for amphibious vehicle autonomy through development of components for low-cost robotic autonomy kits (e.g., Sensing & Perception, Planning & Control, Localization, World Modeling, and Integration) - Complete effort to develop sensors and autonomous behaviors to enable combat ground and amphibious vehicles to perform various missions through integration of payloads developed under other activities. - Complete research to design and develop autonomy capability for specific platforms advancing the USMC Mobile All-Domain Observation and Sensing System (MA-DOSS) and the Unmanned Swarming Amphibious Assault Craft (USAAC). ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue: - Continue research that will focus on intelligent mobility technologies to enable greater capability in harsh off road and littoral environments, with efforts including iterative predictive and adaptive mobility. - Research to study various technologies to improve off-road and littoral mobility and trafficability and to gain a better understanding of the vehicle-ground interface through terrain characterization and researching enhanced platform effectors that allow the system to adapt to varying terrain. - Effort to provide persistent unmanned hydrographic sensing for wide-area maritime situational awareness in support of Expeditionary Advanced Base Operations. - Effort to research technologies that enable more stable vehicle behaviors when operating amphibious platforms within the surf zone during high surf conditions. Initiate: - Develop add-on autonomy software and hardware for Marines to support Expeditionary Advanced Base Operations (EABO) security with reduced manning. - Develop disposable heterogeneous multi-domain unmanned vehicles (UxV) swarms capable of tactical employment with manned units or autonomously. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of efforts to (1) develop add-on autonomy software and hardware for Marines to support Expeditionary Advanced Base Operations (EABO) security with reduced manning and (2) develop disposable heterogeneous multi-domain unmanned vehicles (UxV) swarms capable of tactical employment with manned units or autonomously.					
Title: Future Concepts, Technology Assessment, And Roadmapping	1.225	1.250	1.500	0.000	1.500
Description: This activity supports the planning and integration of technology development efforts across the entire Program Element (PE). In conjunction with the Concepts Based Capabilities System and the Marine Corps Warfighting Laboratory, unique and novel concepts for advanced warfighting are developed and validated. Effectiveness analyses are conducted to identify the synergistic effects that can be achieved through the integration of emerging technology with innovative tactics, doctrine, and techniques. Technology assessments are conducted to determine the supporting technologies that have the highest impact across the warfare areas, and warrant further investment within this PE. Technology Roadmapping is conducted to help identify					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602131M / *Marine Corps Lndg Force Tech*	**Project (Number/Name)** 3001 / *Marine Corps Landing Force Tech*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
opportunities to leverage technology development within the Department of the Navy and the Department of War, as well as with the commercial sector and university communities. The resultant technology investment strategy is developed and used to guide out-year technology development efforts. ***FY 2026 Plans:*** - Continue the assessment of technologies and technology concepts in support of future amphibious operations and the future naval warfare. - Initiate research to develop advanced strategies for USMC small-unit swarm employment. ***FY 2027 Base Plans:*** Complete: - Assessment of technologies and technology concepts in support of future amphibious operations and the future naval warfare. - Research to develop advanced strategies for USMC small-unit swarm employment. Initiate: - Development of early technology experimentation efforts that utilize live force-on-force opportunities to explore early technology concept feasibility and future technology concepts of employment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of an effort to develop early technology experimentation that utilize live force-on-force opportunities to explore early technology concept feasibility and future technology concepts of employment.					
Accomplishments/Planned Programs Subtotals	47.099	40.391	52.155	0.000	52.155

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602131M / *Marine Corps Lndg Force Tech*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	4.585	16.411	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	20.996

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Silicon Anode-Based Lithium-Ion Batteries Research ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop applied research concepts for Silicon Anode-Based Lithium-Ion Batteries.	0.000	4.827
Congressional Add: unmanned logistics solutions ***FY 2025 Accomplishments:*** Continue Unmanned Logistic solutions for the USMC efforts consisted of research efforts for perception sensor and hardware improvement, Database enrichment, Computer Vision architecture and models for enhanced EO/IR performance, as well as Evaluation and development of a visual-based littoral Simultaneous Location and Mapping (SLAM) technique. ***FY 2026 Plans:*** Research and develop Unmanned Logistic solutions for the USMC consisting of efforts for perception sensor and hardware improvement, database enrichment, computer vision architecture and models for enhanced electro-optical/infrared performance, as well as evaluation and development of a visual-based littoral Simultaneous Location and Mapping (SLAM) technique.	4.585	11.584
Congressional Adds Subtotals	4.585	16.411

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy												Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602235N *I Common Picture Applied Research*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	50.260	70.209	40.433	-	40.433	45.598	48.751	47.570	48.087	Continuing	Continuing
0000: *Common Picture Applied Research*	0.000	50.260	55.246	40.433	-	40.433	45.598	48.751	47.570	48.087	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	14.963	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.963

A. Mission Description and Budget Item Justification

Activities and efforts in this program examine concepts and technologies that enable the transformation to Distributed Maritime Operations (DMO). Network centric capabilities rely on information to connect assets and provide timely and accurate understanding of the environment. The mission area requirements for rapid, accurate decision-making; dynamic, efficient, mission- focused communications and networks; and pervasive and persistent sensing drive network centric Science and Technology (S&T) investments.

Today's Sailors and Marines are enabled by Naval S&T. Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this Program Element (PE), the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602235N *I Common Picture Applied Research*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	51.202	55.246	57.181	-	57.181
Current President's Budget	50.260	70.209	40.433	-	40.433
Total Adjustments	-0.942	14.963	-16.748	-	-16.748
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.537			
• Congressional Rescissions	-	-			
• Congressional Adds	-	15.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.391	0.000			
• SBIR/STTR Transfer	-1.333	0.000			
• Program Adjustments	0.000	0.000	-16.748	-	-16.748
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Embedded Cyber Systems for Naval Infastructure*	0.000	11.102
Congressional Add: *Analyzing and Securing Software Supply Chains*	0.000	3.861
Congressional Add Subtotals for Project: 9999	0.000	14.963
Congressional Add Totals for all Projects	0.000	14.963

Change Summary Explanation

Funding: The FY2027 budget request was reduced by $16.748 million to account for a realignment of Common Picture Applied Research resources to meet higher priority Navy requirements.

Technical: No significant change

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602235N / *Common Picture Applied Research*	Project (Number/Name) 0000 / *Common Picture Applied Research*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Common Picture Applied Research*	0.000	50.260	55.246	40.433	-	40.433	45.598	48.751	47.570	48.087	Continuing	Continuing

A. Mission Description and Budget Item Justification

Activities and efforts in this program examine concepts and technologies that enable the transformation to network centric warfare. Network centric capabilities rely on information to connect assets and provide timely and accurate understanding of the environment. The mission area requirements for rapid, accurate decision-making; dynamic, efficient, mission-focused communications and networks; and pervasive and persistent sensing drive network centric Science and Technology S&T investments.

The activities described in this Program Element (PE) address future Navy and Marine Corps capabilities needed to maintain maritime superiority and ensure national security. They are based on input from stakeholders including the Naval enterprises, the combatant commands, the Office of the Chief of Naval Operations, and Headquarters Marine Corps and are designed to exploit breakthroughs in science and technology in order to deliver maximum warfighting benefit to our sailors and marines. These efforts are aligned with shared priorities throughout the whole of RDT&E in order to quickly advance new capabilities from discovery to deployment across the warfighting domains.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Communication and Networks	5.730	7.039	7.489	0.000	7.489
Description: The overarching objective of this activity is to develop high throughput dynamic wireless communications and network technologies critical to the mission performance and robustness of naval communications for widely dispersed, mobile air, land, surface and submerged platforms. These platforms are often Size, Weight and Power (SWaP) limited, and will operate under constraints of cluttered Radio Frequency (RF) spectrum, harsh Electro-Magnetic Interference (EMI) and Beyond Line Of Sight (BLOS) conditions. The technical payoff is increased network data rates, interoperability across heterogeneous radios, dynamic bandwidth management, and greater mobile network connectivity. The operational payoff is that warfighters from the operational command to the tactical edge have near real-time access to information, knowledge and decision-making necessary to perform their tasks, including coalition and allied forces. Emphasis is on tactical edge communications and networks to fully realize net-centric warfare, bridging the Global Information Grid (GIG) and the 'disadvantaged user', e.g., small-deck combatants, submarines, unmanned vehicles, distributed sensors and ground units in urban and RF challenged environments. The current specific objectives are:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Radios and Apertures: - Develop technologies for high band radio, electrically-small and actively scanned antennas, addressing critical issue of radio spectrum bandwidth efficiency, spectrum contention and clutter, agile frequency communications with dynamic spectrum access, all-digital front-end with wide dynamic range, power amplifier efficiency, multipath effects, saltwater propagation and Beyond Line Of Sight (BLOS) communications. - Develop algorithms and signal processing for space-time-frequency diversity communications, including measures for electronic protection, such as low-intercept, antijam waveforms and modulation. - Develop affordable antenna technologies for small size and weight, high radiation efficiency, and wideband operation with rapid beam-steering. - Develop alternatives to Radio Frequency (RF) communications in airborne and terrestrial environments as well as high data rate underwater communications for undersea warfare (distributed sensor netting, unmanned underwater vehicle data exfiltration, submarine Communications at Speed and Depth) using Electro-Optic/Infra-Red (EO/IR) technologies. - Develop secure, high bandwidth communications systems and the exploitation of existing and emerging network protocols that will avail development of new, Low Earth Orbit (LEO) based data transport mechanisms. Tactical Networking and Network Control/Management: - Develop advanced networking techniques for robust, highly dynamic environments; interoperable networks for secure communications and protocols, bandwidth and network management techniques that manage and allocate bandwidth across tactical and theater levels in support of net-centric operations. - Develop rapidly auto-configuring and self-organizing networks with efficient and survivable routing, secure authentication, mobility management and Quality-of-Service guarantee, while optimizing network resources. - Address low bandwidth, synchronization and reliability for Service Oriented Architecture (SOA)/Middleware Architecture in both Mobile Ad-hoc Networks (MANET) and infrastructure-based Internet Protocol (IP) backbone networks. - Develop cognitive network planning and operations engines whose criteria are based directly on mission objectives, while self-adapting and managing the spectrum allocation and radio resources in such a way that network operations, SOA community of interest, and computer network defense are integrated to form a single common tactical network picture that requires a minimum of human intervention and skill. ***FY 2026 Plans:*** Communication and Networks: - Continue research on communications with low probability of detection.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research on novel path computation algorithms and autonomous distributed network control. - Continue research on transmission security enhancements to 5G for tactical operations. - Continue research into underwater blue-green optical communications technologies. - Continue research on electrically small antennas at lower frequencies. - Continue research on interference reduction and cancellation. - Continue research on using current traffic data to predict future, near-term behavior. - Continue efforts in Networks and Communications Technology. The overall goal of this effort is devoted to the application of information theory, network and transport layer theory, and applied foundational science in wireless, networked communications, as well as the reference implementation and design of Naval waveforms, heterogeneous communications networks, tactical data links, tactical edge networks, and backhaul communications systems. These efforts include applied science in the technology areas of information system design, protocol engineering, routing, architectures, waveforms, software defined communications systems, tactical data links low probability intercept/detect networks, information operations, C5ISRT/ Counter C5ISRT (with focus on Command, Control, Communications, Targeting) and reliable networked communications systems, all of which may be operating in contested and denied environments. These efforts include implementation of applied science in spectrum sharing, spectrum agile communications, dynamic spectrum access radios and networks, as well as heterogeneous networked communications for autonomous vehicles and systems that by the completion of their project work, could be demonstrated in the field or at sea with the Fleet. - Complete research addressing several known problems in signal processing theory related to synchronization and detection theory specifically for covert communications waveforms.					
FY 2027 Base Plans: Communication and Networks: - Continue research on communications with low probability of detection. - Continue research on novel path computation algorithms and autonomous distributed network control. - Continue research on transmission security enhancements to 5G for tactical operations. - Continue research on using current traffic data to predict future, near-term behavior. - Continue efforts in Networks and Communications Technology. The overall goal of this effort is devoted to the application of information theory, network and transport layer theory, and applied foundational science in wireless, networked communications, as well as the reference implementation and design of Naval waveforms, heterogeneous communications networks, tactical data links, tactical edge networks, and backhaul communications systems. These efforts include applied science in the technology areas of information					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
system design, protocol engineering, routing, architectures, waveforms, software defined communications systems, tactical data links low probability intercept/detect networks, information operations, C5ISRT/ Counter C5ISRT (with focus on Command, Control, Communications, Targeting) and reliable networked communications systems, all of which may be operating in contested and denied environments. These efforts include implementation of applied science in spectrum sharing, spectrum agile communications, dynamic spectrum access radios and networks, as well as heterogeneous networked communications for autonomous vehicles and systems that by the completion of their project work, could be demonstrated in the field or at sea with the Fleet. - Complete research into underwater blue-green optical communications technologies. - Complete research on electrically small antennas at lower frequencies. - Complete research on interference reduction and cancellation. - Initiate research on multiple-band capability for a metasurface aperture. - Initiate research on low-cost radios for constrained platforms. - Initiate research on cognitive algorithms for clustering. - Initiate research on learning algorithms for link prediction. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Applied Information Sciences for Decision Making	38.524	40.612	29.601	0.000	29.601
Description: The goal of this activity is to develop enablers for decision making and mission execution in order to achieve battlespace superiority. It focuses on the development of algorithms and software technologies that identify and integrate informational content from multiple sources, leading to decision aids that support user-cognitive processes. Because persistent sensors are generating massive amounts of data, the focus is on technologies that not only integrate information from diverse sources, but also provide indications of information significance in ways that support the user's decision needs, regardless of location and operational situation. To achieve this, it must be possible to automate understanding of the battlespace by identifying objects, determining relationships among the objects, recognizing activities, assessing intent, and automatically generating courses of action with associated risks and uncertainty. Effort will also be devoted to developing technology for increasing assurance and security for Communication, Command and Control (C3) information systems and technology for improving information discovery and information presentation in such systems. The Nano Electronics					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Technology activity is focused on developing ultra-low power, higher performance computing devices and components that are based on novel functionalities of nanometer scale materials and are enabled by improved understanding of nanomaterials, new devices and circuit design concepts, as well as new architectures uniquely suited for nanoscale systems. The Science of Artificial Intelligence (AI) program is focused on developing technologies that lead to advanced and specialized artificial intelligent architectures, constructs and process to handle the range of Naval data in dynamics contexts and rapidly changing adversarial environments, driven by adversaries. ***FY 2026 Plans:*** Quantum Information Sciences: - Continue research into efficient protocols to implement quantum information processing with atoms and photons. - Continue research into quantum approaches to solve hard decision problems with naval relevance that may outperform classical techniques. - Continue research on robust devices compatible with long distance distribution of entanglement. - Continue research on applications of distributed entanglement in a quantum network. Computational Methods for Decision Making: - Continue development of methods for large-scale coordination and aggregation of individual preferences. - Continue development of methods for adaptive training on individual and group levels. - Continue analysis of information flow and dynamics of influence in large networks. - Continue development of tools for structured and distributed deliberation and decision-making. - Continue development of secure and privacy-preserving tools for information sharing. - Continue development of conversational information retrieval systems. - Continue research into stochastic integer programming models and algorithms to achieve strategic and tactical superiority in a variety of contexts. - Continue development of visual sense making capabilities for distributed Navy teams to successfully run operations in increasingly contested, diverse, multi-expertise, and highly data driven decisional contexts. - Continue research into logistics planning and scheduling in contested environments. - Continue research into algorithms that coordinate and optimize the behavior of multiple heterogeneous assets and sensors in a contested environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development of methods for Unmanned Aerial Vehicle (UAV)-based video surveillance along roads and rivers that are partially occluded by tree canopies using a marsupial system consisting of a large UAV capable of long-duration flight and several small quadcopters. - Continue development of robust computer vision systems inspired by human visual system. - Continue research in building reliable classifiers, based on a novel data augmentation approach, for robust object recognition. - Continue investigation of Radio Frequency (RF) imaging for motion detection and activity recognition behind optically opaque walls. - Continue development of visual analytics for detection, tracking, and recognition of small vessels in the maritime domain from various types of surveillance platforms. - Continue work in Artificial Intelligence Technology. The goal of this effort is to develop products in Intelligent Agents, Cognitive Science, Robotics, Autonomy, Machine Learning (ML), and Multi-agent control planes/ protocols intended for future distributed autonomous unmanned systems and swarms. These include reference implementations, integration of S&T products, and sufficiently mature components that, by the completion of their project work, could be demonstrated in the field or at sea with the Fleet. These should include advancements in the fields of Cognitive S&T, Coalition/Alliance compatibility, safe collaboration, multi-agent autonomous systems and control planes, cognitive modeling and machine learning, and all facets of artificial intelligence pertinent to Naval programs of record and S&T projects, to ultimately include deployed Adaptable Artificial Intelligence. Cues of the current context, including the environmental state or goals of the robot or its teammates, will modulate the execution of existing robotic skills, such as adjusting the robot's speed. (NRL) - Complete development of tools for synthesis of information, intelligence gathering and effective decision making. - Complete research into developing practical integer programming approaches to solving binary classification problems. - Initiate development of collective decision-making with large language models. - Initiate research into convex and combinatorial programming models and algorithms for contested logistics. - Initiate research to develop signal processing methods, together with deep learning, for automated understanding of SAR/ISAR images. Nanoscale Electronics Technology: - Continue research on ultra-fast, non-volatile memory materials and devices. - Complete integration of contacts and dielectrics on two-dimensional semiconductors. - Complete research for designable non-centrosymmetric superconductors.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate applied research on probabilistic bits and their integration into stochastic networks. Cyber Defense: - Continue efforts in High Assurance Systems Technology. This includes but is not limited to a wide range of efforts such as Cyber, Cryptological work, deep neural networks, assured computing, autonomous SDN orchestration, automation for reverse engineering and vulnerability analysis, Game-theoretic Artificial Intelligence (AI) for defenses against cyber-attacks, adversarial threat modeling, privacy-enhancing technologies, covert and encrypted communications, Field Programmable Gate Arrays (FPGA)-based hardware assurance, and automatic generation of Correct-by-Construction code. These endeavors should lead to applied, reference implementations, or sufficient maturity of the basic S&T that are demonstrable in field testing or at sea once the work is completed. Additional areas will apply basic foundational science currently being planned or conducted in areas such as autonomous cyber maneuver, scaling and automation of algorithms for vulnerability discovery, mitigation, weaponization, cyber resilience, programmability, and reconfigurability. This is an expansion of previously mentioned development of tools and techniques to model and understand adversary motivation and intent that scale beyond traditional artifact analysis in order to achieve robust, hardened and scalable cyber defense techniques that can be employed throughout Navy networks that address nation state adversary activities. (NRL) - Continue to conduct applied research toward dependable and resilient cyber systems leveraging results from basic research program and developing and evaluating technical approaches for future naval capabilities. The program investigates technologies addressing root causes of cyber vulnerability in order to enhance efficiency, robustness and cyber resiliency for all classes of computing systems in naval warfighting systems. - Continue design and development of tools and techniques for understanding and improving security of cyber-physical systems, which are a critical area of focus for assuring mission success of naval platforms. The systematic extension of techniques in cyber fault tolerance are informing new resilience architectures for information processing systems that ingest data from the physical and spectral environments. - Continue design and development of tools and techniques to advance the automation of cyber operations, a critical need as timelines are shrinking and human expertise remains in short supply. - Continue systematic investigation into transformation and analysis methods toward achieving zero-trust software and hardware supply chains, seeking to proactively disrupt undesirable behavior without having to specifically identify it. - Complete development of initial prototypes that implement cyber counter proliferation techniques designed to automatically disrupt components necessary for execution of cyber malware campaigns.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate development of prototypes for network defense technologies to protect internet facing devices from arbitrary access that exposes them to zero-day attacks through cryptographically protected overlay networks. - Initiate design and development of tools and techniques for conducting mission-focused cyber analysis of systems-of-systems (platforms) that take into account the full exploitability surface that could be accessible to attackers, going beyond traditional scanners to deliver more accurate ground truth of cyber posture as a key component of mission survivability. Data Analytics: - Continue development of methods for large-scale assessment and evaluation of distributed information. - Continue development of Artificial Intelligence/Machine Learning techniques using game theory to model Blue versus Red deliberate planning where decisions made over time with imperfect information inhibits each side of knowing exact state of opposing and own team's condition. - Continue development of optimization solutions that place Blue forces in optimal search locations due to limited search Blue assets and large search areas against hard to find adversary targets. - Complete development of multi-commodity optimization solutions for contested environments that satisfy large-scale distribution of classes of supplies while avoiding too-dense consolidation of resources depot, which may serve as an easy target for an adversary to disrupt logistic feasibility. Science of Artificial Intelligence (AI) - Complete the development and assessing of techniques for training AI to extract Naval task procedures from natural language and chat data. - Complete the integration of physical models with machine learning to enable predictive maintenance for autonomous Naval platforms and enable long duration autonomous missions. - Continue application of new brain-inspired artificial intelligence algorithms and architectures for the development of compact low-power hardware suitable for edge computing and signal processing in Naval platforms. - Continue applied research on AI tools for multi-level optimization of shipyard maintenance scheduling to accelerate on time delivery of ships out of maintenance and improve ship availability and fleet readiness. - Continue applied research on principled computational frameworks for integrating structured knowledge and physical models with machine learning for fast learning of concepts and tasks with minimal supervision to analyze the sparse, noise and unlabeled data of the Naval domain.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue applied research to design embedded low-power neuromorphic processors into intelligent autonomous systems to permit onboard analysis of target data and integrated vehicle controls to enable mine countermeasures missions. - Continue research exploring the collaborative relationship between AI agents and warfighters, pursuing multi-goal objectives, to aid commanders on complex Naval tasks. - Continue research on embedding AI in robotic systems to enable human-machine collaboration and robot training for hazardous missions. - Continue use of AI for enhanced collaborative decision-making and human-machine dialogue to increase the speed and quality of operational decisions. - Initiate applied AI research for generating and formatting shipboard equipment failure reports for automated ingestion into Navy maintenance scheduling systems.					
FY 2027 Base Plans: Quantum Information Sciences: - Continue research into efficient protocols to implement quantum information processing with atoms and photons. - Continue research into quantum approaches to solve hard decision problems with naval relevance that may outperform classical techniques. - Continue research on robust devices compatible with long distance distribution of entanglement. - Continue research on applications of distributed entanglement in a quantum network. - Initiate research on quantum computing applications in machine learning. Computational Methods for Decision Making: - Continue development of methods for large-scale coordination and aggregation of individual preferences. - Continue analysis of information flow and dynamics of influence in large networks. - Continue development of tools for structured and distributed deliberation and decision-making. - Continue development of secure and privacy-preserving tools for information sharing. - Continue development of conversational information retrieval systems. - Continue development of collective decision making with large language models. - Continue research into stochastic integer programming models and algorithms to achieve strategic and tactical superiority in a variety of contexts. - Continue development of visual sense making capabilities for distributed Navy teams to successfully run operations in increasingly contested, diverse, multi-expertise, and highly data driven decisional contexts.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into logistics planning and scheduling in contested environments. - Continue research into algorithms that coordinate and optimize the behavior of multiple heterogeneous assets and sensors in a contested environment. - Continue research into convex and combinatorial programming models and algorithms for contested logistics. - Continue development of methods for Unmanned Aerial Vehicle (UAV)-based video surveillance along roads and rivers that are partially occluded by tree canopies using a marsupial system consisting of a large UAV capable of long-duration flight and several small quadcopters. - Continue development of robust computer vision systems inspired by human visual system. - Continue research in building reliable classifiers, based on a novel data augmentation approach, for robust object recognition. - Continue research to develop signal processing methods, together with deep learning, for automated understanding of SAR/ISAR images. - Continue work in Artificial Intelligence Technology. The goal of this effort is to develop products in Intelligent Agents, Cognitive Science, Robotics, Autonomy, Machine Learning (ML), and Multi-agent control planes/ protocols intended for future distributed autonomous unmanned systems and swarms. These include reference implementations, integration of S&T products, and sufficiently mature components that, by the completion of their project work, could be demonstrated in the field or at sea with the Fleet. These should include advancements in the fields of Cognitive S&T, Coalition/Alliance compatibility, safe collaboration, multi-agent autonomous systems and control planes, cognitive modeling and machine learning, and all facets of artificial intelligence pertinent to Naval programs of record and S&T projects, to ultimately include deployed Adaptable Artificial Intelligence. Cues of the current context, including the environmental state or goals of the robot or its teammates, will modulate the execution of existing robotic skills, such as adjusting the robot's speed. (NRL) - Complete development of methods for adaptive training on individual and group levels. - Complete investigation of Radio Frequency (RF) imaging for motion detection and activity recognition behind optically opaque walls. - Complete development of visual analytics for detection, tracking, and recognition of small vessels in the maritime domain from various types of surveillance platforms. - Initiate research into models and algorithms that analyze risk and optimal decision making in contested environments. - Initiate development of imaging systems that use minimal sensing and power for application-specific tasks. Such untethered imaging systems have many applications particularly in surveillance.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Nanoscale Electronics Technology: - Continue research on ultra-fast, non-volatile memory materials and devices. - Continue applied research on probabilistic bits and their integration into stochastic networks. - Initiate research on non-volatile memory designed to operate at high temperatures. - Initiate research exploring antiferromagnetic thin films for Terahertz device applications. Cyber Defense: - Continue to conduct applied research toward dependable and resilient cyber systems leveraging results from basic research program and developing and evaluating technical approaches for future naval capabilities. The program investigates technologies addressing root causes of cyber vulnerability in order to enhance efficiency, robustness and cyber resiliency for all classes of computing systems in naval warfighting systems. - Continue design and development of tools and techniques for understanding and improving security of cyber-physical systems, which are a critical area of focus for assuring mission success of naval platforms. The systematic extension of techniques in cyber fault tolerance are informing new resilience architectures for information processing systems that ingest data from the physical and spectral environments. - Continue design and development of tools and techniques to advance the automation of cyber operations, a critical need as timelines are shrinking and human expertise remains in short supply. - Continue development of prototypes for network defense technologies to protect internet facing devices from arbitrary access that exposes them to zero-day attacks through cryptographically protected overlay networks. - Continue design and development of tools and techniques for conducting mission-focused cyber analysis of systems-of-systems (platforms) that take into account the full exploitability surface that could be accessible to attackers, going beyond traditional scanners to deliver more accurate ground truth of cyber posture as a key component of mission survivability. - Continue efforts in High Assurance Systems Technology. This includes but is not limited to a wide range of efforts such as Cyber, Cryptological work, deep neural networks, assured computing, autonomous SDN orchestration, automation for reverse engineering and vulnerability analysis, Game-theoretic Artificial Intelligence (AI) for defenses against cyber-attacks, adversarial threat modeling, privacy-enhancing technologies, covert and encrypted communications, Field Programmable Gate Arrays (FPGA)-based hardware assurance, and automatic generation of Correct-by-Construction code. These endeavors should lead to applied, reference implementations, or sufficient maturity of the basic S&T that are demonstrable in field testing or at sea once the work is completed. Additional areas will apply basic foundational science currently being planned or conducted in areas such as autonomous cyber maneuver, scaling and automation of algorithms for vulnerability discovery,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
mitigation, weaponization, cyber resilience, programmability, and reconfigurability. This is an expansion of previously mentioned development of tools and techniques to model and understand adversary motivation and intent that scale beyond traditional artifact analysis in order to achieve robust, hardened and scalable cyber defense techniques that can be employed throughout Navy networks that address nation state adversary activities. (NRL) - Complete systematic investigation into transformation and analysis methods toward achieving zero-trust software and hardware supply chains, seeking to proactively disrupt undesirable behavior without having to specifically identify it. - Initiate development of methods for measuring the exploitation of vulnerabilities as a scale of resource investment by an adversary and validating whether those metrics can meet naval needs for establishing mission superiority in the face of novel cyber threats. Data Analytics: - Continue development of methods for large-scale assessment and evaluation of distributed information. A modular modeling framework that maintains computational efficiency while incorporating new phenomena through a novel guess-and-check paradigm. - Continue development of optimization solutions that place Blue forces in optimal search locations due to limited search Blue assets and large search areas against hard-to-find adversary targets. - Complete development of Artificial Intelligence/Machine Learning techniques using game theory to model Blue versus Red deliberate planning where decisions made over time with imperfect information inhibits each side of knowing exact state of opposing and own team's condition. - Initiate development of interactive artificial intelligence-enabled decision support analytics for maritime contested logistics. These enhanced decision support tools will anticipate logistics planners needs, improve solution interpretability, and enable rapid exploration of preferences. - Initiate development of an optimization-based decision-support analytic that prescribes effective plans for utilizing air, sea, ground, and rail connectors to logistically support current operations. Develop advanced optimization algorithms to search through a vast number of possible logistics plans and prescribe those that appear best (according to input data and user preferences) in seconds. Science of Artificial Intelligence (AI)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue application of brain-inspired artificial intelligence algorithms and architectures for the development of compact low-power hardware suitable for edge computing and signal processing in Naval platforms. - Continue applied research on AI tools for multi-level optimization of shipyard maintenance scheduling to accelerate on time delivery of ships out of maintenance and improve ship availability and fleet readiness. - Continue applied research on principled computational frameworks for integrating structured knowledge and physical models with machine learning for fast learning of concepts and tasks with minimal supervision to analyze the sparse, noisy and unlabeled data of the Navy domain. - Continue applied research to design embedded low-power neuromorphic processors into intelligent autonomous systems to permit onboard analysis of target data and integrated controls to enable maritime mine countermeasures missions. - Continue research exploring the collaborative relationship between AI agents and warfighters, pursuing multi-goal objectives, to aid commanders on complex Navy tasks. - Continue research on embedding AI in robotic systems to enable human-machine collaboration and robot training for hazardous Navy missions. - Continue use of AI for enhanced collaborative decision-making and human-machine dialogue to increase the speed and quality of Navy operational decisions. - Continue applied AI research for generating and formatting shipboard equipment failure reports for automated ingestion into Navy maintenance scheduling systems. - Initiate applied research on AI to support course of action generation for Navy mission planning, predicting adversary course of action, and transfer of learning across mission areas. - Initiate applied research to develop AI agents that validate the outputs of other complex AI agents that provide command and control decision support for manned and unmanned Navy systems, in order to be consistent with rules of engagement. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects reduced investments in Applied Information Sciences for Decision Making Research to meet higher priority Navy requirements.					
Title: Tactical Space Exploitation	6.006	7.595	3.343	0.000	3.343

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The Tactical Space Exploitation initiative explores the application of new space craft technologies on small, light-weight and low-cost satellites, to enhance naval warfighting capabilities by taking advantage of the global access, revisit and connectivity provided by orbital platforms. To perform early-applied discovery Research and Development (R&D) to ensure Navy-Marine Corps access to critical space-associated capabilities on the ground, at sea, and in a contested space environment; research thrusts include spacecraft R&D in five strategic cross-cutting areas that lead to the fielding of systems which perform functions critically important to operations. These areas are: (1) Advanced Space Platform Technologies, such as development of new and prototype space systems that are tailored to specific threats, including technologies which reduce cost, mass, power and/ or extend on-orbit lifetimes, and sub-systems that advance propulsion and control capabilities towards precision maneuvering while minimizing fuel; (2) Next-generation Payloads and Sensors, including space robotic capabilities to address on-orbit inspection, servicing, repair, assembly, and mission life extension; (3) Connectivity for disadvantaged users that is rugged, high-bandwidth and space based; (4) Space Weather, and (5) Space Situational Awareness. ***FY 2026 Plans:*** Space Research and Spacecraft Technology: - Continue efforts into Hypersonic Technologies. Hypersonic technologies are a key enabler for future Naval capabilities. Early applied research on many aspects of this field are expected to have significant impact on future DON capabilities. These include, but are not limited to propulsion, thermal management, materials, airframe design, and in-flight communication. This is an expansion and redefining of efforts aimed at the development of robust and reliable hypersonic air breathing platforms. - Continue efforts into Space Environment Awareness and Exploitation. Many Naval capabilities are enabled by or can be disrupted or degraded by the space environment. Research thus is focused on satellite communication, geopositioning, Over the Horizon RADAR, High Frequency (HF) Over the Horizon communication and Intelligence, Surveillance, and Reconnaissance (ISR). Early applied research in sensing, specifying, and forecasting of the space environment is a key enabler for future Naval capabilities in areas including anomaly attribution, domain awareness, operations planning, and tactical decision aids. This is an expansion of previous efforts. Those include efforts for the development and demonstration of new measurement and data assimilation capabilities to predict phenomena that influence Over-the-Horizon Radar (OTHR) and communication, which will advance OTHR related capabilities and communication avenues. It also					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
includes efforts that looked to take early-applied discovery Research and Development (R&D) to ensure Navy-Marine Corps access to critical space-associated capabilities on the ground, at sea, and in a contested space environment. - Continue efforts into Satellite Technologies. Innovative satellite technologies are a critical enabler for DON-relevant capabilities. The goals of these efforts include robust, responsive, low-cost, resilient space systems, comprehensive maritime domain and space domain awareness systems, protecting assets in all contested theaters, autonomous and robustly reconfigurable architectures and providing connectivity for highly dynamic, dispersed, and disadvantaged Naval users. In addition, novel space technologies have the potential to improve operations in GPS-denied environments using alternative Position, Navigation and Timing (PNT), on-board targeting and payload data edge processing. ***FY 2027 Base Plans:*** Space Research and Spacecraft Technology: - Continue efforts into Hypersonic Technologies. Hypersonic technologies are a key enabler for future Naval capabilities. Early applied research on many aspects of this field are expected to have significant impact on future DON capabilities. These include, but are not limited to propulsion, thermal management, materials, airframe design, and in-flight communication. This is an expansion and redefining of efforts aimed at the development of robust and reliable hypersonic air breathing platforms. - Continue efforts into Space Environment Awareness and Exploitation. Many Naval capabilities are enabled by or can be disrupted or degraded by the space environment. Research thus is focused on satellite communication, geopositioning, Over the Horizon RADAR, High Frequency (HF) Over the Horizon communication and Intelligence, Surveillance, and Reconnaissance (ISR). Early applied research in sensing, specifying, and forecasting of the space environment is a key enabler for future Naval capabilities in areas including anomaly attribution, domain awareness, operations planning, and tactical decision aids. This is an expansion of previous efforts. Those include efforts for the development and demonstration of new measurement and data assimilation capabilities to predict phenomena that influence Over-the-Horizon Radar (OTHR) and communication, which will advance OTHR related capabilities and communication avenues. It also includes efforts that looked to take early-applied discovery Research and Development (R&D) to ensure Navy-Marine Corps access to critical space-associated capabilities on the ground, at sea, and in a contested space environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602235N / *Common Picture Applied Research*	**Project (Number/Name)** 0000 / *Common Picture Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts into Satellite Technologies. Innovative satellite technologies are a critical enabler for DON-relevant capabilities. The goals of these efforts include robust, responsive, low-cost, resilient space systems, comprehensive maritime domain and space domain awareness systems, protecting assets in all contested theaters, autonomous and robustly reconfigurable architectures and providing connectivity for highly dynamic, dispersed, and disadvantaged Naval users. In addition, novel space technologies have the potential to improve operations in GPS-denied environments using alternative Position, Navigation and Timing (PNT), on-board targeting and payload data edge processing. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects reduced investments in Tactical Space Exploitation Applied Research to meet higher priority Navy requirements.					
Accomplishments/Planned Programs Subtotals	50.260	55.246	40.433	0.000	40.433

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602235N / *Common Picture Applied Research*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	14.963	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.963

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Embedded Cyber Systems for Naval Infastructure ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Design and develop embedded cyber systems for Naval infrastructure.	0.000	11.102
Congressional Add: Analyzing and Securing Software Supply Chains ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct analysis for securing software supply chains.	0.000	3.861
Congressional Adds Subtotals	0.000	14.963

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602236N *I Warfighter Sustainment Applied Res*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	85.865	118.188	60.350	-	60.350	68.222	71.959	68.828	69.588	Continuing	Continuing
0000: *Warfighter Sustainment Applied Res*	0.000	76.211	74.264	60.350	-	60.350	68.222	71.959	68.828	69.588	Continuing	Continuing
9999: *Congressional Adds*	0.000	9.654	43.924	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	53.578

A. Mission Description and Budget Item Justification

Today's Sailors and Marines are enabled by Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of Naval basic and applied research, and advanced technology development investments to ensure Naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

U.S. Sailors are the Navy's main weapons system. Their skill, resilience and courage remain our greatest asymmetric advantage. This Program Element (PE) supports research that advances decision aides, autonomy, human-machine teaming, augmented performance, command and control and protective equipment to ensure Sailors outthink, outperform and outfight adversaries in a complex, maritime environment. This PE also supports developments in biotechnologies, biomanufacturing, and advanced materials technologies to provide new options to enhance performance of Sailors and their platforms. This PE also supports the Office of Naval Research (ONR) Global mission to serve as the preeminent external facilitator for the Naval Research Enterprise. This is accomplished by establishing quality, relevant connections amongst the international research and development community, Naval fleet/forces, DOW, other U.S. Government agencies, industry, and international partners.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602236N *I Warfighter Sustainment Applied Res*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	86.379	74.264	79.861	-	79.861
Current President's Budget	85.865	118.188	60.350	-	60.350
Total Adjustments	-0.514	43.924	-19.511	-	-19.511
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.576			
• Congressional Rescissions	-	-			
• Congressional Adds	-	45.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.426	0.000			
• SBIR/STTR Transfer	-1.941	0.000			
• Program Adjustments	0.000	0.000	-19.511	-	-19.511
• Rate/Misc Adjustments	0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Traumatic Brain Injury Research*	0.000	14.481
Congressional Add: *Anti-Corrosion Nanotechnology*	0.000	3.861
Congressional Add: *Physics Based Neutralization of Threats to Human T*	0.000	4.827
Congressional Add: *Prediction and Assessment of Traumatic Brain Injur*	0.000	1.448
Congressional Add: *Tele-Robotic Surgery for Combat Casualty Care*	0.000	3.861
Congressional Add: *Cross-Domain Naval Robots*	4.827	0.000
Congressional Add: *Innovative Coatings Research*	2.896	5.792
Congressional Add: *Rapid applied materials and process development*	1.931	9.654
Congressional Add Subtotals for Project: 9999	9.654	43.924
Congressional Add Totals for all Projects	9.654	43.924

Change Summary Explanation

Funding: The FY2027 budget request decreased by $19.511 million due to RDT&E rebalancing, IT Budget Reductions, Contractor Support Savings, and reductions in Warfighting Sustainment Applied Research for higher priority science and technology initiatives.

Technical: No significant change.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602236N *I Warfighter Sustainment Applied Res*

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602236N / *Warfighter Sustainment Applied Res*	Project (Number/Name) 0000 / *Warfighter Sustainment Applied Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Warfighter Sustainment Applied Res*	0.000	76.211	74.264	60.350	-	60.350	68.222	71.959	68.828	69.588	Continuing	Continuing

A. Mission Description and Budget Item Justification

U.S. Sailors are the Navy's main weapons system. Their skill, resilience and courage remain our greatest asymmetric advantage. This Program Element (PE) supports research that advances decision aides, autonomy, human-machine teaming, augmented performance, command and control and protective equipment to ensure Sailors outthink, outperform and outfight adversaries in a complex, maritime environment. This PE also supports developments in biotechnologies, biomanufacturing, and advanced materials technologies to provide new options to enhance performance of Sailors and their platforms. This PE also supports the Office of Naval Research (ONR) Global mission to serve as the preeminent external facilitator for the Naval Research Enterprise. This is accomplished by establishing quality, relevant connections amongst the international research and development community, Naval fleet/forces, DOW, other U.S. Government agencies, industry, and international partners.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Advanced Naval Materials	21.827	19.295	15.841	0.000	15.841
Description: Advanced Naval Materials efforts support several Science and Technology (S&T) Focus Areas, including Materials/Electronics, Manufacturing, Naval Engineering and Power and Energy, and perform research across a broad spectrum of technical areas. The materials development will yield technology maturation of multifunctional material solutions for Navy applications. Beginning in FY 2026, Research Areas have been identified for the Focus Areas within the S&T budget. These new Research Areas aim to better align the efforts in the Focus Area to allow visibility into the specific challenges and the approaches to alleviate those challenges. The research areas include the following: Manufacturing Technology, Sustainment Technology, Resilient Naval System Technologies, Power & Energy Technologies and Operational Endurance Applied Research. ***FY 2026 Plans:*** - Continue/Complete applied research in support of advanced materials aimed at improving naval platform susceptibility against detection and classification. Materials: - Continue advanced materials, processes and capabilities.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue ongoing research efforts to improve affordability and reliability of piezoelectric transduction materials. The focus will be on Acoustic Transduction Materials Technology to reduce size, weight, and power (SWaP) and improve sensitivity of sensors and SONAR. - Continue efforts focused on the development of high thermal conductivity materials for high power electronic device application to improve performance. - Continue research to pursue commercially viable processing for nano-ceramics. The focus will be on nano-ceramics aimed at improved resilience of naval systems and platforms and capabilities for producing novel, high performance components. - Continue applied research efforts in matrix materials and nano/micro-scale embedded structures useful for controlling platform signatures as well as their manufacturability in quantity. - Continue research to develop Advanced and Alternative Structural Alloys and Composites, as well as their associated Joining and Repair technologies. - Initiate work on functional polymeric composites for shipboard fire safety. Manufacturing Technology, includes the following efforts: - Continue applied research to investigate computational tools for additive manufacturing materials and processes. - Continue investments in hybrid laser arc welding and high temperature polymeric composites. - Continue investments in electronics/electro-optics and biomanufacturing. - Initiate efforts to investigate new computational tools for dynamic response Integrated Manufacturing and Sustainment includes the following efforts: - Continue applied research to investigate corrosion control technologies through investigation of corrosion inhibitor performance for coatings and corrosion mechanisms of compositionally complex alloys (CCA) and additive manufactured materials. - Initiate efforts for low/no maintenance resiliency for unmanned systems Power & Energy Technologies, includes the following efforts: - Complete research aimed at advancing materials, processes and capabilities necessary for mitigating climate risk to expeditionary water supply. - Continue assessment of additive materials and long-term hot corrosion with burner systems in a Navy environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research aimed at advancing materials, processes and capabilities necessary for improving resilience of expeditionary water supply. - Initiate Scale-up and Processing of New High Temperature Dielectrics for High Energy Density Capacitors - Initiate superconducting materials applied research aimed at increasing critical temperature performance Operational Endurance Applied Research, includes the following efforts: - Continue research aimed at advancing materials, processes and capabilities necessary for mitigating climate risk to expeditionary water supply. Resilient Naval System Technologies (formerly Naval Engineering), includes the following efforts: -Continue applied research efforts in support of advanced naval platform materials refining and concentrating efforts on advanced structural materials that improve Platform Survivability and Functionality. - Continue applied research in support of advanced materials aimed at improving naval platform susceptibility against detection and classification. -Initiate applied research efforts in support of near platform chemical physics and associated technologies to improve system performance by reducing in-situ chemical reactions with naval materials.					
FY 2027 Base Plans: Materials: - Continue advanced materials, processes and capabilities. - Continue ongoing research efforts to improve affordability and reliability of piezoelectric transduction materials. The focus will be on Acoustic Transduction Materials Technology to reduce size, weight, and power (SWaP) and improve sensitivity of sensors and SONAR. - Continue efforts focused on the development of high thermal conductivity materials for high power electronic device application to improve performance. - Continue research to pursue commercially viable processing for nano-ceramics. The focus will be on nano-ceramics aimed at improved resilience of naval systems and platforms and capabilities for producing novel, high performance components. - Continue applied research efforts in matrix materials and nano/micro-scale embedded structures useful for controlling platform signatures as well as their manufacturability in quantity. - Continue research to develop Advanced and Alternative Structural Alloys and Composites, as well as their associated Joining and Repair technologies.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue work on functional polymeric composites for shipboard fire safety. - Initiate efforts in multifunctional materials technology development including, Adaptive Multifunctional Surfaces, Multi-functional Battery Materials, Flexible Thermoelectric Coolers, Quantum Sensing Material Design. Manufacturing Technology, includes the following efforts: - Continue applied research to investigate computational tools for additive manufacturing materials and processes. - Continue investments in hybrid laser arc welding and high temperature polymeric composites. - Continue investments in electronics/electro-optics and biomanufacturing. - Continue efforts to investigate new computational tools for dynamic response Integrated Manufacturing and Sustainment includes the following efforts: -Continue applied research to investigate corrosion control technologies through investigation of corrosion inhibitor performance for coatings and corrosion mechanisms of compositionally complex alloys (CCA) and additive manufactured materials. - Continue efforts for low/no maintenance resiliency for unmanned systems - Initiate efforts for digital tools for sustainment Power & Energy Technologies, includes the following efforts: - Complete assessment of additive materials and long-term hot corrosion with burner systems in a Navy environment. - Continue Scale-up and Processing of New High Temperature Dielectrics for High Energy Density Capacitors - Continue research aimed at advancing materials, processes and capabilities necessary for improving resilience of expeditionary water supply. - Continue superconducting materials applied research aimed at increasing critical temperature performance Operational Endurance Applied Research, includes the following efforts: - Complete research aimed at advancing materials, processes and capabilities necessary for mitigating climate risk to expeditionary water supply. Resilient Naval System Technologies (formerly Naval Engineering), includes the following efforts: -Continue applied research efforts in support of advanced naval platform materials refining and concentrating efforts on advanced structural materials that improve Platform Survivability and Functionality.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue applied research in support of advanced materials aimed at improving naval platform susceptibility against detection and classification. -Continue applied research efforts in support of near platform chemical physics and associated technologies to improve system performance by reducing in-situ chemical reactions with naval materials. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The FY 2026 to FY 2027 decrease in funding is due to completion of applied research efforts for development of naval materials in support of naval power systems, including efforts associated with attributable fuel cells.					
Title: Biocentric Technologies	4.623	6.106	3.745	0.000	3.745
Description: Applied research to develop knowledge and technologies for Naval capabilities. Research areas include: biotechnology and biomanufacturing (OUSW(R&E) Critical Technology Area); warfighter augmentation and resilience; and marine mammal health. This research provides secure and agile options to enhance performance, increase power and energy solutions to extend operational duration, and improve stealth, maneuverability, and mission capability of Navy platforms and autonomous systems. Biotechnology and biomanufacturing have the ability to decrease the supply chain concerns. This investment is required to secure the Navy's dominance in the 21st century by harnessing biology as a transformative manufacturing and sensing platform. This funding will spur the research needed to deliver asymmetric advantages and solve our most pressing contested logistics challenges. Large-scale collaborations to include investigation of new biofuels for hypersonics and jet fuel, drastically increasing operational endurance and distance. This research provides a clear, de-risked pathway for transitioning these technologies into the industrial base and out to the fleet. ***FY 2026 Plans:*** Bioinspired Autonomous Systems - Complete search behavior algorithms for autonomous vehicles to enhance object detection and recognition abilities. - Continue to apply bio-inspired principles to design amphibious vehicles. - Continue to conduct applied research on bio-inspired underwater vehicle propulsion and control as an effective alternative to current propulsion approaches.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to investigate application of flexible batteries to power underwater vehicles. - Initiate harvesting of ocean wave- and current flow-energy to power underwater bio-inspired vehicle prototypes for longer duration missions. Naval Biosciences and Synthetic Biology for Naval Applications - Complete applied research to incorporate microbial sensors on Naval platforms for environmental monitoring. - Continue applied research in bioengineering microbial hosts and new pathways for the biomanufacturing of Naval-relevant materials (e.g. lubricants, bioplastics) at point of need. - Initiate applied research on development and testing of microbially-derived biological components for materials synthesis (e.g. structural, color changing, thermal resistance). - Initiate applied research on development of new biofuels for hypersonics and jet fuel, drastically increasing operational endurance and distance. Marine Mammal Health and Performance - Complete research to establish therapeutics to prevent kidney stone formation in dolphins. - Complete research to facilitate surveillance of marine mammal viral pathogens in marine waters and indigenous mussels/oysters/clams. - Continue applied research to implement personalized medicine for care of marine mammals under Navy Marine Mammal Program. - Continue the application of advanced technologies which focus on pulmonary and ocular disease. - Continue research on new military capabilities for dolphins, sea lions, and penguins. - Continue to implement dolphin vocalizations as a tool for diagnosing their well-being. Warfighter Augmentation and Resilience - Continue to translate basic research on oxygen separation and transport and carbon dioxide scrubbing into prototype oxygen-generating and carbon dioxide-disposing diving mask to replace existing rebreathers. - Continue development of manned-unmanned teaming platforms to aid a diver in enhanced situational awareness, expanding diving windows of opportunity. ***FY 2027 Base Plans:*** Bioinspired Autonomous Systems - Complete research application of flexible batteries to power underwater vehicles. - Continue to apply bio-inspired principles to design amphibious vehicles.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to conduct applied research on bio-inspired underwater vehicle propulsion and control as an effective alternative to current propulsion approaches. - Continue harvesting of ocean wave- and current flow-energy to power underwater bio-inspired vehicle prototypes for longer duration missions. Naval Biosciences and Synthetic Biology for Naval Applications - Continue applied research in bioengineering microbial hosts and new pathways for the biomanufacturing of Naval-relevant materials (e.g. lubricants, bioplastics) at point of need. - Continue applied research on development and testing of microbially-derived biological components for materials synthesis (e.g. structural, color changing, thermal resistance). - Continue applied research on development of new biofuels for hypersonics and jet fuel, drastically increasing operational endurance and distance Marine Mammal Health and Performance - Continue applied research to implement personalized medicine for care of marine mammals under Navy Marine Mammal Program. - Continue the application of advanced technologies which focus on pulmonary and ocular disease. - Continue research on new military capabilities for dolphins, sea lions, and penguins. - Continue to implement dolphin vocalizations as a tool for diagnosing their well-being. Warfighter Augmentation and Resilience - Continue to translate basic research on oxygen separation and transport and carbon dioxide scrubbing into prototype oxygen-generating and carbon dioxide-disposing diving mask to replace existing rebreathers. - Continue development of manned-unmanned teaming platforms to aid a diver in enhanced situational awareness, expanding diving windows of opportunity. - Initiate research to evaluate feasibility of new porous liquids as alternative oxygen delivery systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease in funding from FY 2026 to FY 2027 is due to the completion of efforts using flexible batteries to power underwater vehicles.					
Title: Human Factors and Organizational Design	5.463	3.687	6.273	0.000	6.273
Description: Operational and tactical level decision-making requires making time-critical decisions with incomplete and outdated information. This activity enables Sailors to make decisions for optimizing lethality and survivability in distributed and contested environments. These applied research efforts will improve human-machine teaming and human-level decision support in Naval contexts in order to enhance operational outcomes. Research areas include the development of system interface designs to avoid collisions of Navy ships, developing algorithms to explain how blue and red forces predict and counter each other's operational and psychological maneuvers, and develop cognitive architecture for robotic systems. ***FY 2026 Plans:*** Cognitive Science for Human-Machine Teaming and Computational Neuroscience - Complete applied research on system interface designs and human-machine interaction methodologies that enable or enhance Naval Warfighter performance and human-machine teaming. - Continue to study approaches to incorporate cognitive architectures and visual reasoning processes on robotic teammates to enable enhanced cooperative behaviors. - Continue to assess feasibility of incorporating realistic neural systems into autonomous systems for robust on-board scene understanding, communication and intelligence. - Continue to conduct applied research to develop agile humanoid robot teammates with enhancements including: (i) Embedding computer vision with visual-spatial reasoning; (ii) Auditory systems to enable human communication; and (iii) Neuromorphic (brain-like) processors. - Continue to investigate the effectiveness of incorporating vision and language processes in robots to facilitate human-robot team performance learning and communication. Analytics, Modeling and Simulation for Local and Regional Situation Awareness - Continue research in the application of large language models and artificial intelligence techniques to improve information advantage. - Continue to develop models and techniques for the assessment of operational information environment (e.g. public affairs, digital, and social media). - Continue to investigate and assess tactics, techniques and procedures to discover, monitor and counter adversarial maneuvers in digital and social media.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate improvement of modeling and simulation for information operations exercises. Command Decision Making - Continue applied research to develop collaborative artificial intelligence (AI) decision support tools that learn from human command and control tasks. - Continue decision centered design technology development. - Continue research to study and evaluate manned-unmanned teaming Command and Control (C2) paradigms and solutions applied to different command echelons. - Continue to research automation algorithms for managing man-machine teaming and scalability of control to large numbers of autonomous entities (robots / swarms). - Initiate a human centric approach to the design of a decision aid enabled by collaborative AI for reducing biases and increasing decision-making effectiveness for Carrier Strike Group Commanders. This effort will develop AI-augmented Command Decision Aids (CDAs) to include personalized Commander decision models and user interfaces, domain specific agents, and an orchestration framework. Human Interaction with Autonomous Systems - Complete applied research understanding how to enhance diver performance with small autonomous underwater vehicle (AUV) assistants. - Continue to conduct applied research to train mission-capable robots to perform complex manipulation tasks, integrated with the ability for self-learning. - Continue evaluations of mobility and manipulation ability of advanced humanoid robot prototypes on shipboard maintenance and urban building door breaching, multi-floor mobility and hazard removal tasks. - Continue to conduct applied research to incorporate computer vision, acoustic localization, reasoning and communication capabilities into robot teammates. Naval Team Performance and Design - Continue to conduct applied human factors research on concurrent and disparate human-machine team composition and performance. - Continue to evaluate the impact of team composition, stress and social decision making to reduce decision biases and performance errors in operational settings. - Initiate applied research evaluating novel training methodologies for foundational cognitive skillsets necessary in rapidly changing and disconnected environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Strategic Competition - Continue research in the application of strategic competition complexity models across naval, joint, interagency, and allied partner data sources and visualization tools. - Continue applied research to design collaborative strategic competition assessment framework.					
FY 2027 Base Plans: Cognitive Science for Human-Machine Teaming (previously represented under Cognitive Science for Human-Machine Teaming and Computational Neuroscience heading) - Continue to study approaches to incorporate cognitive architectures and visual reasoning processes on robotic teammates to enable enhanced cooperative behaviors in Naval operations. - Continue to assess feasibility of incorporating realistic neural systems into Navy autonomous systems for robust on-board scene understanding, communication and intelligence. - Continue to conduct applied research to develop agile humanoid robot teammates with enhancements including: (i) Embedding camera-based computer vision for scene understanding; (ii) Auditory systems to enable human communication; and (iii) Neuromorphic (brain-like) processors. - Continue to investigate the effectiveness of incorporating vision and language processes in robots to facilitate human-robot team performance learning and communication in Naval operations. Analytics, Modeling and Simulation for Local and Regional Situation Awareness - Complete to investigate and assess tactics, techniques and procedures to discover, monitor and counter adversarial maneuvers in digital and social media. - Continue research in the application of large language models and artificial intelligence techniques to improve information advantage. - Continue to develop models and techniques for the assessment of Naval operational information environment (e.g. public affairs, digital, and social media). - Continue improvement of modeling and simulation for information Naval operations exercises. - Initiate research to develop course-of-action decision support and threat assessment capabilities for complex Naval operations in the information environment. Command Decision Making - Continue applied research to develop collaborative artificial intelligence (AI) decision support tools that learn from human command and control tasks. - Continue decision centered design technology development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research to study and evaluate manned-unmanned teaming Command and Control (C2) paradigms and solutions applied to different Navy command echelons. - Continue to research automation algorithms for managing man-machine teaming and scalability of control to large numbers of autonomous Naval entities (robots / swarms). - Continue a human centric approach to the design of a decision aid enabled by collaborative AI for reducing biases and increasing decision-making effectiveness for Carrier Strike Group Commanders. This effort will develop AI-augmented Command Decision Aids (CDAs) to include personalized Commander decision models and user interfaces, domain specific agents, and an orchestration framework. Human Interaction with Autonomous Systems - Continue to conduct applied research to train mission-capable robots to perform complex manipulation tasks, integrated with the ability for self-learning. - Continue evaluations of mobility and manipulation ability of advanced humanoid robot prototypes on shipboard maintenance and urban building door breaching, multi-floor mobility and hazard removal tasks. - Continue to conduct applied research to incorporate computer vision, acoustic localization, reasoning and communication capabilities into robot teammates. Naval Team Performance and Design - Complete to evaluate the impact of team composition, stress and social decision making to reduce decision biases and performance errors in Naval operational settings. - Initiate development and validation of data collection methods, frameworks, and predictive modeling for the prevention of harmful behaviors (e.g., suicide). - Initiate efforts to use emerging technologies to inform Naval team performance, composition, decision making, and well-being. Strategic Competition - Continue research in the application of complexity models across naval, joint, interagency, and allied partner data sources and visualization tools. - Continue applied research to develop methodology to identify vulnerabilities in Access, Basing and Overflight (ABO) before adversaries exploit them. - Continue to develop the analytic methods to model and destroy our adversary's irregular warfare strategies that are actively targeting our Naval equities.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue Innovation Protection Policy (IPP) research, analysis, and development for protection of intellectual property pertaining to critical Naval and national security technologies. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to an increased investment in developing strategic competition models across naval, joint, interagency, and allied partner data sources, along with the initiation of efforts to develop course-of-action decision support to co-pilots in complex operations, and validation of predictive models for the prevention of harmful behaviors in sailors.					
Title: Human Research Protection Program (HRPP)	1.518	2.782	1.565	0.000	1.565
Description: The Federal Policy for the Protection of Human Subjects is codified in the Department of War (DoW) as part 219 of title 32, Code of Federal Regulations (also known and hereinafter referred to as the "Common Rule"). DoW Instruction 3216.02 establishes policy and assigns responsibilities for the protection of human subjects in DoW-supported programs to implement the Common Rule and requires Heads of DoW Components to establish and oversee DoW Component policies and procedures that ensure compliance with federal and DoW requirements. The Secretary of the Navy Instruction (SECNAVINST) 3900.39E CH-1 identifies the Chief of Naval Research as providing support and expertise for human research protection in research conducted or supported by the Navy and Marine Corps Systems Commands and institutions, operational forces, training Commands, and Department of the Navy (DON)-supported research involving human subjects performed by non-DoW institutions. The Human Research Protection Program (HRPP) protects the rights, safety, and welfare of human subjects in research conducted or sponsored by the Navy and Marine Corps by: 1) ensuring that research involving human subjects complies with federal regulations, DoW Directives, DON Instructions, and Marine Corps Orders governing research protection requirements; and 2) providing education and training programs in human research ethics to all levels of staff involved in the review, approval, conduct, management, or support of DON human subjects research (HSR). ***FY 2026 Plans:*** - Continue Program Management of the DON Research Protections Information Technology Management System (RPITMS) for management and compliance oversight of ongoing human research protections activities, as well as the ONR HRPP's web-based research ethics training program (Collaborative Institutional Training					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Initiative (CITI)); annually this required training is completed by more than 6,000 Navy and Marine Corps personnel. - Continue providing education and training programs in human research ethics to all levels of staff involved in the review, approval, conduct, support or management of DON human subjects' research. - Continue to conduct site visits (site inspections and assist visits) to Navy and Marine Corps Commands as part of the ongoing monitoring and quality improvement program for human research protections within the Department of the Navy and in accordance with 32 CFR 219, DoW Instruction 3216.02 CH-1, and Secretary of the Navy Instruction (SECNAVINST) 3900.39E CH-1. - Continue to provide subject matter expertise and guidance on all DON-conducted and -supported research involving human subjects. - Continue to revise all human research protection program standard operating procedures to make consistent with 32 CFR 219, DoW Instruction 3216.02 CH-1 and SECNAVINST 3900.39E CH-1. - Continue review and revisions to SECNAVINST 3900.39E CH-1, "Human Research Protection Program", bringing it into compliance with DoW Instruction 3216.02 CH-1. - Continue review and revisions to the DON Component HRPP Management Plan (CMP). The CMP identifies the single, senior official having the authority and responsibility for implementing the management plan and identifies all authorities delegated by the Secretary of the Navy. - Initiate the Research Protection Community of Excellence: Department of Navy (DON) HRPP Command Learn and Share Series (CLaSS); which aims to share best practices across the DON research protection enterprise.					
FY 2027 Base Plans: - Continue Program Management of the DON Research Protections Information Technology Management System (RPITMS) for management and compliance oversight of ongoing human research protections activities, as well as the ONR HRPP's web-based research ethics training program (Collaborative Institutional Training Initiative (CITI)); annually this required training is completed by more than 6,000 Navy and Marine Corps personnel. - Continue providing education and training programs in human research ethics to all levels of staff involved in the review, approval, conduct, support or management of DON human subjects' research. - Continue to conduct site visits (site inspections and assist visits) to Navy and Marine Corps Commands as part of the ongoing monitoring and quality improvement program for human research protections within the Department of the Navy and in accordance with 32 CFR 219, DoW Instruction 3216.02 CH-1, and Secretary of the Navy Instruction (SECNAVINST) 3900.39E CH-1.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to provide subject matter expertise and guidance on all DON-conducted and -supported research involving human subjects. - Continue to revise all human research protection program standard operating procedures to make consistent with 32 CFR 219, DoW Instruction 3216.02 CH-1 and SECNAVINST 3900.39E CH-1. - Continue review and revisions to SECNAVINST 3900.39E CH-1, "Human Research Protection Program", bringing it into compliance with DoW Instruction 3216.02 CH-1. - Continue review and revisions to the DON Component HRPP Management Plan (CMP). The CMP identifies the single, senior official having the authority and responsibility for implementing the management plan and identifies all authorities delegated by the Secretary of the Navy. - Continue the Research Protection Community of Excellence: Department of Navy (DON) HRPP Command Learn and Share Series (CLaSS); which aims to share best practices across the DON research protection enterprise. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to a rebalancing of naval S&T priorities and a reduction in planned contracting costs for the Human Research Protection Program.					
Title: Medical and Human Performance Technologies	10.449	11.761	8.118	0.000	8.118
Description: The overall objective of this activity is to sustain, extend, enhance, and repair warfighter endurance, resiliency and readiness while operating in multi-domain and expeditionary environments. This Activity includes two program areas: medical and human performance research. Efforts categorized as Human Performance Technologies focus on research for maintaining or exceeding normal human performance. Efforts categorized as Medical Technologies focus on research for recovery and treatment following injury. The human performance portion of this applied research activity centers on improving performance of divers and submarine crews, developing biological markers of stress response, protecting warfighter performance and preventing injuries during exposure to high levels of acoustic or electromagnetic energy, and wearable physiological sensors to support safety and survivability of Naval forces during training and in operational environments. Results from these efforts will enhance Naval readiness and lethality and will inform operational safety guidelines.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The medical portion of this applied research activity addresses naval-unique threats and centers on protecting Sailors, developing diagnostic and treatment capabilities for use in operational environments, and prototyping new capabilities to recover injured Sailors. Results from these efforts will improve the Fleet's ability to save lives, especially during prolonged field care and maritime mass-casualty events. ***FY 2026 Plans:*** Medical Technologies - Complete modeling, microelectronics and novel composite materials for biomedical sensing to prototype equipment to protect, sense, respond, and enhance human survivability. - Complete experimental trials of autonomous fluid resuscitation and ventilation algorithms for closed loop autonomous casualty care devices. - Continue to conduct applied research into the use of novel technologies to improve warfighter survivability in the maritime domain including warfighter-integrated biomedical and environmental sensing prototype systems to augment human resilience and survivability. - Continue to conduct applied research on autonomous recovery, care, and transportation of impaired/injured personnel during operations ashore and afloat to improve casualty survival. - Continue application of novel quantification methods for soft biological materials to enable bio-accurate simulation of organs and tissues in human digital twin representations. Human Performance Technologies - Complete applied research to develop novel augmented reality platforms that will autonomously track/display environmental factors and hazards for warfighters operating in environments with low or no visibility. - Complete evaluation of active control of jet noise via Bi-Modal Excitation. - Complete F135 Noise Assessment - Continue to investigate biomedical effects of electromagnetic energy exposures. - Complete to assess feasibility of using predictors of stress in a military population to predict operational performance decrement and survival. - Continue applied research to identify and validate physiological capabilities that prevent and mitigate the risks of decompression sickness and oxygen toxicity injury. - Continue applied research on the feasibility of new underwater ultrasound devices to generate individualized and deterministic decompression profiles to reduce the risk of decompression sickness. - Continue research to evaluate the efficacy and properties of anti-oxidants in mitigating accumulation of of free radicals to enable longer duration, deeper dives.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue novel underwater biosensors for physiologic health status monitoring. - Continue studies to address current personal protective technology gaps with operations in extreme cold or austere environments. - Continue studies to address current technology gaps for personal survival equipment in cold water. - Initiate research to evaluate the efficacy and properties of anti-oxidants in mitigating accumulation of harmful reactive oxygen species in hyperoxic conditions. - Initiate novel underwater biosensors for physiologic health status monitoring. - Initiate research to characterize neurologic protective properties of hydrogen in response to hyperoxia and high pressure. Jet Noise Reduction - Continue theoretical and computational study of jet noise control. - Continue evaluation of active control of jet noise via bi-modal excitation. - Continue resonance prediction and mitigation in rectangular twin-jets. - Initiate machine-learning for resolvent-based jet-noise models. - Initiate collaborative Research on machine-learning for jet noise prediction and control. - Initiate F135 Noise Assessment.					
FY 2027 Base Plans: Medical Technologies - Complete to conduct applied research into the use of novel technologies to improve Sailor survivability in the maritime domain including Sailor-integrated biomedical and environmental sensing prototype systems to augment human resilience and survivability. - Continue to conduct applied research on autonomous recovery, care, and transportation of impaired/injured personnel during operations ashore and afloat to improve casualty survival. - Continue application of novel quantification methods for soft biological materials to enable bio-accurate simulation of organs and tissues in human digital twin representations. - Initiate incorporation of human digital twins for design of crewed/autonomous platforms to reduce injuries and improve casualty survivability. Human Performance Technologies - Complete applied research on the feasibility of new underwater ultrasound devices to generate individualized and deterministic decompression profiles to reduce the risk of decompression sickness.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to investigate biomedical effects of electromagnetic energy exposures on ships. - Continue applied research to identify and validate physiological capabilities that prevent and mitigate the risks of decompression sickness and oxygen toxicity injury. - Continue research to evaluate the efficacy and properties of anti-oxidants in mitigating accumulation of free radicals to enable longer duration, deeper dives. - Continue research to evaluate the efficacy and properties of anti-oxidants in mitigating accumulation of harmful reactive oxygen species in hyperoxic conditions. - Continue novel underwater biosensors for physiologic health status monitoring. - Continue studies to address current personal protective technology gaps with Naval operations in extreme cold or austere environments. - Continue studies to address current technology gaps for Naval personal survival equipment in cold water. - Continue research to characterize neurologic protective properties of hydrogen in response to hyperoxia and high pressure in Naval divers. Jet Noise Reduction - Continue theoretical and computational study of jet noise control. - Continue evaluation of active control of jet noise via bi-modal excitation. - Continue resonance prediction and mitigation in rectangular twin-jets. - Continue machine-learning for resolvent-based jet-noise models. - Continue collaborative research on machine-learning for jet noise prediction and control. - Continue F135 Noise Assessment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the completion of research using underwater ultrasound devices for the generation of individualized decompression profiles and research on biomedical and environmental sensing prototype systems.					
Title: The Office of Naval Research Global ***Description:*** The mission of Office of Naval Research (ONR) Global is to serve as the preeminent external facilitator for the Naval Research Enterprise. Providing direct support to the OPERATIONAL Fleet / Force with our planning, fostering, and encouraging scientific research to discover technology that will make a difference	21.953	22.727	17.734	0.000	17.734

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
for our Sailors and Marines. This is accomplished by establishing quality, relevant connections between the research and development communities around the globe, Naval Fleet/Forces, DOW, other US Government agencies and key allies and partners. Science Advisors (SA) This effort embeds scientists and engineers on to the Operational Fleet/Forces Staff with the dedicated purpose to identify, translate and advance Fleet Force Science and Technology (S&T) needs and requirements for the Office of Naval Research (ONR), Naval Research Enterprise (NRE), and the Naval Research and Development Establishment (NR&DE). These individuals work to align opportunities for shaping capability development and technology experimentation for the benefit of the current and future Fleet and Force. Science Advisors (SA) work across the NRE to help shape the DON investment in science and technology, develop teaming relationships to rapidly prototype, experiment, demonstrate and transition technology, supports development of technology-based capability options for Naval forces, and enables warfighting innovations based on technical and conceptual possibilities. The SA Program also informs capability-based war games using current and future technology to identify future capability strengths and shortfalls that assist in shaping the DON investment strategy. The ONR Global SA Program enables continuous communication and collaboration between the warfighters, the Naval Research & Development Enterprise, and strategic development commands. Through their deep understanding of operational needs and a vast collaborative network within the NRE, NR&DE, industry, and academia, ONR Global Science Advisors connect S&T to operational needs and directly support transition of capabilities that deliver desired solutions for Navy and Marine Corps warfighters. International Science Utilizes a cadre of PhD-level civilian and military scientists to actively search the globe for emerging scientific research and promising technologies that can be invested in with the goal of solving DON S&T challenges. This investment builds global S&T awareness to reduce the risk of potential technological surprise and supports theater security cooperation goals to sustain cooperative relationships with an expanding set of international allies and partners. These efforts are accomplished by collaborating with organizations and researchers through liaison/ exchange visits, conferences and workshops, and grants in innovative applied research. Through their deep understanding of Navy S&T needs and a vast collaborative network of researchers around the global within the NRE, NR&DE, industry, and academia, Science Directors are able to identify research areas and early developmental technologies that may evolve to have a significant capability solution for Navy and Marine Corps warfighters.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
International engagement Strong alliance and partner relationships are crucial to the United States' ability to address global challenges. ONR Global works with key allies and partners to identify common requirements and areas of work that can be leveraged to improve the capabilities of Sailors and Marines. By engaging, developing, and maintaining bilateral and multilateral relationships, international agreements, and other activities that promote RDT&E collaboration and interoperability we are working to identify allies and partners will support efforts in the Indo-Pacific theater. The team continues to support the strengthening of trans-Atlantic collaborative efforts in science and technology with a goal of developing technology solutions that will increase joint capability and Fleet/Force interoperability. ***FY 2026 Plans:*** - Continue to have Science Advisors (SA) working across the NRE to help shape the DON investment strategy in science and technology. They work to develop relationships that support rapid prototyping, experimentation, and transitioning technology, based on the requirements and needs of the Fleet / Force. Continue communication and collaboration between the warfighters, the Naval Research & Development Enterprise, and strategic development commands. With their efforts and deep understanding of operational needs, vast collaborative network within the NRE, NR&DE, industry, and academia, ONR Global Science Advisors will connect S&T products to operational needs and directly support transition of capabilities that deliver desired solutions for Navy and Marine Corps warfighters. ONR Global continues to objectively assess placement of current Science Advisors and requests for additional support in terms of impact to the Fleet and S&T return on investment. - Continue to utilize PhD-level civilian and military scientists searching the globe for emerging scientific research and promising technologies that could be invested in with the goal of solving DON S&T challenges. These investments will provide global S&T awareness to reduce the risk of potential technological surprise and supported theater security cooperation goals to sustain cooperative relationships with an expanding set of international allies and partners. These efforts will be accomplished by collaborating with organizations and researchers through liaison/ exchange visits, conferences and workshops, and grants in innovative applied research. Science Directors can identify research areas and early developmental technologies that may evolve to have a significant capability solution for Navy and Marine Corps warfighters. - Continue to support international engagements with key allies and partners to identify common requirements and areas of work that can be leveraged to improve the capabilities of Sailors and Marines. Continuing working with 10 key allies and partners to complete performance requirements review meetings, build data sharing and exchange agreement, and create future cooperative project agreements. Also work to identify common goals					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and requirements for three multi-lateral groups, and the North Atlantic Treaty Organization (NATO), in order to increase collective Naval capability, capacity, and interoperability. Continue looking at other international allies and partners for future capability-based relationships that could have a significant improvement on warfighter interoperability and capacity.					
FY 2027 Base Plans: - Continue to have Science Advisors (SA) working across the NRE to help shape the DON investment strategy in science and technology. They work to develop relationships that support rapid prototyping, experimentation, and transitioning technology, based on the requirements and needs of the Fleet / Force. Continue communication and collaboration between the warfighters, the Naval Research & Development Enterprise, and strategic development commands. With their efforts and deep understanding of operational needs, vast collaborative network within the NRE, NR&DE, industry, and academia, ONR Global Science Advisors will connect S&T products to operational needs and directly support transition of capabilities that deliver desired solutions for Navy and Marine Corps warfighters. ONR Global continues to objectively assess placement of current Science Advisors and requests for additional support in terms of impact to the Fleet and S&T return on investment. - Continue to utilize PhD-level civilian and military scientists searching the globe for emerging scientific research and promising technologies that could be invested in with the goal of solving DON S&T challenges. These investments will provide global S&T awareness to reduce the risk of potential technological surprise and supported theater security cooperation goals to sustain cooperative relationships with an expanding set of international allies and partners. These efforts will be accomplished by collaborating with organizations and researchers through liaison/ exchange visits, conferences and workshops, and grants in innovative applied research. Science Directors can identify research areas and early developmental technologies that may evolve to have a significant capability solution for Navy and Marine Corps warfighters. - Continue to support international engagements with key allies and partners to identify common requirements and areas of work that can be leveraged to improve the capabilities of Sailors and Marines. Continuing working with 10 key allies and partners to complete performance requirements review meetings, build data sharing and exchange agreement, and create future cooperative project agreements. Also work to identify common goals and requirements for three multi-lateral groups, and the North Atlantic Treaty Organization (NATO), in order to increase collective Naval capability, capacity, and interoperability. Continue looking at other international allies					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and partners for future capability-based relationships that could have a significant improvement on warfighter interoperability and capacity. ***FY 2027 OOC Plans:*** Not applicable. ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY2027 to realign resources towards higher priority science and technology (S&T) initiatives.					
Title: Training Technologies ***Description:*** Applied research to enhance the ability to develop Naval forces from time of recruitment through separation from the military capable of competing and succeeding against novel threats and using novel, rapidly-fielded, technologies. This includes use of modern approaches for evaluation of knowledge, skills, and aptitude in school houses, field training, and point-of-need. Improved effectiveness is achieved by applying psychometric theory, data science, cognitive science, operations research, modeling and simulation, and computer sciences to the development, delivery, evaluation, and execution of training and education. Emphasis is on approaches that are robust at scale and can be implemented in a resource-constrained environment. Live, Virtual, Constructive (LVC) training increases reps and sets for faster time to proficiency, decreases wear and tear on Naval platforms, and prevents revealing tactics, techniques, and procedures to adversaries. ***FY 2026 Plans:*** Technologies for Naval Training - Initiate research to assess speech-to-text technologies on tactical communications in multiple representative Naval Command and Control (C2) environments and investigate use of these technologies for automated After-Action Review (AAR). - Initiate applied research on adaptive/individualized training techniques for complex domains using virtual training. Advanced Integrated Maritime Mission Modeling - Continue conducting applied research to understand performance metrics, data collection techniques, and analysis approaches that can be used to assess warfighter readiness.	10.378	7.906	7.074	0.000	7.074

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to conduct applied research and validate computational approaches for automated compression of meteorological and oceanographic scenario data for use in Live, Virtual, and Constructive training to increase fidelity. - Continue to develop a web-based "game server" interfaced with Naval platforms for Live, Virtual, and Constructive training content delivery. - Continue to enhance Live, Virtual, and Constructive simulation-based training technologies for Distributed Maritime Operations (DMO). - Continue to experiment with cyber and other non-kinetic effects (NKE) training approaches to include within Live, Virtual, and Constructive shipboard environments. Learning to Integrate and Adapt to New Naval Technologies and Threats - Continue applied research on tailorable and scalable capabilities to improve cognitive and leadership-based knowledge, skills, and abilities to improve Sailor adaptability and ability to operate in distributed and contested Naval environments. - Initiate applied research evaluating knowledge, skills, and abilities and training methodologies to accelerate adoption and integration of emerging technologies (e.g., wearables), supporting increased Naval mission effectiveness. 21st Century Learning - Continue applied research to examine effectiveness of performance support and training technologies on submarine SONAR operator performance within training scenarios. - Continue design of training technologies and methodologies to improve delivery and assessment of submarine SONAR operator training.					
FY 2027 Base Plans: Technologies for Naval Training - Complete research to assess speech-to-text technologies on tactical communications in multiple representative Naval Command and Control (C2) environments and investigate use of these technologies for automated After-Action Review (AAR). - Continue applied research on adaptive/individualized training techniques for complex Naval domains using virtual training. Advanced Integrated Maritime Mission Modeling					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete applied research and validation of computational approaches for automated compression of meteorological and oceanographic scenario data for use in Live, Virtual, and Constructive training to increase fidelity. - Complete to develop a web-based server interfaced with Naval platforms for Live, Virtual, and Constructive training content delivery. - Complete to enhance Live, Virtual, and Constructive simulation-based training technologies for Distributed Maritime Operations (DMO). - Complete experiment with cyber and other non-kinetic effects (NKE) training approaches to include within Live, Virtual, and Constructive shipboard environments. - Continue conducting applied research to understand performance metrics, data collection techniques, and analysis approaches that can be used to assess Naval readiness. - Initiate development of automated data collection and assessment methodologies, including new methodologies for injecting Information Warfare domains into Naval LVC training. - Initiate applied research and development for organic, on-demand, integrated Live, Virtual, and Constructive framework and tools for conducting full Carrier Strike Group training and Mission Rehearsal at sea (to include air and surface). Learning to Integrate and Adapt to New Naval Technologies and Threats - Continue applied research on tailorable and scalable capabilities to improve cognitive and leadership-based knowledge, skills, and abilities to improve Sailor adaptability and ability to operate in distributed and contested Naval environments. - Continue applied research evaluating knowledge, skills, and abilities and training methodologies to accelerate adoption and integration of emerging technologies (e.g., wearables), supporting increased Naval mission effectiveness. 21st Century Learning - Complete applied research to examine effectiveness of performance support and training technologies on submarine SONAR operator performance within training scenarios. - Continue design of training technologies and methodologies to improve delivery and assessment of submarine SONAR operator training.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 0000 / *Warfighter Sustainment Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to completion of research using cyber and other non-kinetic effects (NKE) training approaches.					
Accomplishments/Planned Programs Subtotals	76.211	74.264	60.350	0.000	60.350

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602236N / *Warfighter Sustainment Applied Res*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	9.654	43.924	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	53.578

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Traumatic Brain Injury Research ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate effort to accelerate traumatic brain injury research.	0.000	14.481
Congressional Add: Anti-Corrosion Nanotechnology ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate anti-corrosion nanotechnology research.	0.000	3.861
Congressional Add: Physics Based Neutralization of Threats to Human T ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Continue researching physics-based approach for understanding directed energy induced traumatic brain injuries.	0.000	4.827
Congressional Add: Prediction and Assessment of Traumatic Brain Injur ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate effort to predict and assess traumatic brain injury using elastography.	0.000	1.448
Congressional Add: Tele-Robotic Surgery for Combat Casualty Care ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Continue to build capability for augmented reality support of robotic surgical resection of traumatically injured or cancerous structures.	0.000	3.861
Congressional Add: Cross-Domain Naval Robots ***FY 2025 Accomplishments:*** - Advance state of the art of intelligent robots that can operate on benthic surfaces, underwater, on surface of water, and descent through air.	4.827	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
- Research will be algorithms and mechanisms to adapt to complex terrains and transitions between domains. - Multi-fluid control surfaces and multi-use limbs will be developed to operate in air, water, and benthic sediments. - Research will include design, fabrication, testing in pool environments, and development of scaling principles that generalize across natural environments. ***FY 2026 Plans:*** N/A		
Congressional Add: Innovative Coatings Research ***FY 2025 Accomplishments:*** - Expand capabilities in high throughput coatings experimentation to make and test Navy-relevant coatings systems. - Link data generated using high throughput experimentation to AI/ML models for predictions of properties and performance optimization - Carry out experimental research on Navy-relevant coatings systems of the future - Develop a sustainable strategic pathway for a Coatings Center of Excellence to serve the needs of the Department of War for advanced coating systems ***FY 2026 Plans:*** Continue the following: - Expand capabilities in high throughput coatings experimentation to make and test Navy-relevant coatings systems. - Link data generated using high throughput experimentation to AI/ML models for predictions of properties and performance optimization. - Carry out experimental research on Navy-relevant coatings systems of the future. - Develop a sustainable strategic pathway for a Coatings Center of Excellence to serve the needs of the Department of War for advanced coating systems.	2.896	5.792
Congressional Add: Rapid applied materials and process development ***FY 2025 Accomplishments:*** - Enable the rapid design and validation of next generation naval alloys and manufacturing processes with a responsiveness of 1 week between initial concept and validation of mechanical properties. - Establish operations on a small scale (i.e., 50-100 pounds/ heat) to validate the concept and processes. - Design new steel alloy chemistries - Fabricate, heat treat and characterize steels - Conduct testing to validate the material properties ***FY 2026 Plans:*** Continue the following:	1.931	9.654

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602236N / *Warfighter Sustainment Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
- Enable the rapid design and validation of next generation naval alloys and manufacturing processes with a responsiveness of 1 week between initial concept and validation of mechanical properties. - Establish operations on a small scale (i.e., 50-100 pounds/ heat) to validate the concept and processes. - Design new steel alloy chemistries - Fabricate, heat treat and characterize steels - Conduct testing to validate the material properties		
Congressional Adds Subtotals	9.654	43.924

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602271N *I Electromagnetic Systems Applied Research*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	95.977	148.469	74.603	-	74.603	79.805	83.744	81.360	82.367	Continuing	Continuing
0000: *Electromagnetic Systems Applied Research*	0.000	85.358	79.929	74.603	-	74.603	79.805	83.744	81.360	82.367	Continuing	Continuing
9999: *Congressional Adds*	0.000	10.619	68.540	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	79.159

A. Mission Description and Budget Item Justification

Freedom of maneuver on a global scale for U.S. naval forces depends upon assured access to the electromagnetic spectrum and the ability to deny adversary exploitation. Electromagnetic technologies must fluidly deliver communication, surveillance electronic warfare and digital integration to understand, shape and defend the battlespace. The Electromagnetic Systems Applied Research Program addresses technology needs associated with Naval platforms for new capabilities in Electro-Optic and Infrared (EO/IR) Sensors, Surveillance, Electronic Warfare, Navigation, Solid State Electronics, Vacuum Electronics Power Amplifiers, and Nanoelectronics. The program supports development of technologies to enable capabilities in Missile Defense, Directed Energy, Platform Protection, Time Critical Strike, and Information Distribution. Activities and efforts within this Program have attributes that focus on enhancing the affordability of warfighting systems.

Today's Sailors and Marines are enabled by Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602271N *I Electromagnetic Systems Applied Research*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	102.441	79.929	89.751	-	89.751
Current President's Budget	95.977	148.469	74.603	-	74.603
Total Adjustments	-6.464	68.540	-15.148	-	-15.148
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.460			
• Congressional Rescissions	-	-			
• Congressional Adds	-	71.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-4.280	0.000			
• SBIR/STTR Transfer	-2.183	0.000			
• Program Adjustments	0.000	0.000	-15.148	-	-15.148
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Future Radio Frequency Digital Array Technology*	0.000	48.268
Congressional Add: *Dark Swarm in Denied Environments*	0.000	3.861
Congressional Add: *PFAS Free Composite Radomes*	0.000	4.827
Congressional Add: *Miniaturized full spectrum hyperspectral sensor*	2.896	0.000
Congressional Add: *Advanced Antenna Tech for E-2D*	7.723	11.584
Congressional Add Subtotals for Project: 9999	10.619	68.540
Congressional Add Totals for all Projects	10.619	68.540

Change Summary Explanation

Financial: The FY 2027 budget request was reduced by $15.148 million to reflect a realignment of resources to meet higher priority Navy requirements.

Technical: No significant change.

Schedule: No significant change.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602271N / *Electromagnetic Systems Applied Research*	Project (Number/Name) 0000 / *Electromagnetic Systems Applied Research*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Electromagnetic Systems Applied Research*	0.000	85.358	79.929	74.603	-	74.603	79.805	83.744	81.360	82.367	Continuing	Continuing

A. Mission Description and Budget Item Justification

Freedom of maneuver on a global scale for U.S. naval forces depends upon assured access to the electromagnetic spectrum and the ability to deny adversary exploitation. Electromagnetic technologies must fluidly deliver communication, surveillance electronic warfare and digital integration to understand, shape and defend the battlespace. This project addresses technology opportunities associated with Naval platforms for new capabilities in Electro-Optic and Infrared (EO/IR) Sensors, Surveillance, Electronic Warfare, Navigation, Solid State Electronics, Vacuum Electronics Power Amplifiers, and Nanoelectronics. The project supports development of technologies to enable capabilities in Missile Defense, Directed Energy, Platform Protection, Time Critical Strike, and Information Distribution. This project directly supports the Department of War Joint Warfighter Plan and the Defense Technology Area Plans. Activities and efforts within this program have attributes that focus on enhancing the affordability of warfighting systems. The program also provides for technology efforts to maintain proactive connectivity and collaboration between Department Of the Navy (DON) Science and Technology (S&T) and Joint, Navy, and Marine Corps commands worldwide. Due to the number of efforts in this Program Element (PE), the programs described herein are representative of the work included in this PE.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Electronic Warfare Technology	34.676	31.664	33.548	0.000	33.548
Description: The overarching objective of this activity is to develop technologies that enable the development of affordable, effective and robust Electronic Warfare (EW) systems across the entire Electromagnetic Spectrum (EMS) that will increase the operational effectiveness and survivability of U.S. Naval units. Technology development is focused on Distributed Electronic Warfare in support of Distributed Maritime Operations. Emphasis is placed on passive sensors and active and passive Countermeasure (CM) systems that exploit and counter a broad range of electromagnetic threats. The focus is on maintaining near perfect, real-time knowledge of the enemy; countering the threat of missiles against deployed Naval forces; precision identification and location of threat emitters; and development of technologies that have broad application across multiple disciplines within the EW mission area. This activity also includes developments to protect these technologies from external interference, and modeling and simulation required to support the development of these technologies. The current objectives are: - Electronic Warfare (EW) Radio Frequency (RF) Technology: Develop and demonstrate technologies in the RF spectrum (covering frequencies from kilohertz to terahertz) that include developments in detection, signal					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
processing and passive/active techniques for wideband Electronic Attack (EA), Electronic Protection (EP) and the Electronic Support (ES) mission areas. - Electronic Warfare (EW) Electro-Optic/Infrared (EO/IR) Technology: Develop and demonstrate counter EO/IR technologies extending from the ultraviolet to the far infrared spectral bands. This includes advances in multispectral sensors, multiband sources, beam forming/steering, and signal processing and transmission. - EW Integrated and Networked Technology: Develop and demonstrate technologies that will enable an increased situational awareness and response across the Electromagnetic Spectrum (EMS) with broad spatial coverage using all available EW assets to provide coordinated, adaptive and networked EW sensing, protection and attack. - Advanced EW Enabling Technologies: Develop classified advanced electronic warfare technology in support of current and predicted capability requirements emphasizing distributive effects. ***FY 2026 Plans:*** Electronic Warfare (EW): - Continue research in federated, coordinated, and integrated Electronic Warfare (EW) systems for the development of distributed EW technologies for Electronic Surveillance (ES), decoys and countermeasures, and Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance and Targeting (C4ISRT). This EW research includes Electronic Protection (EP) for our own weapons and Command, Control, Communications, Computers, Cyber Defense, Intelligence, Surveillance and Reconnaissance (C5ISR) systems allowing them to operate in a heavily contested environment. - Continue research and development in the area of hard-kill and soft-kill coordination and planning. - Continue development and implementation of combined EW and cyber effects to increase the reach and effectiveness of each domain in support of distributed maritime operations. - Continue research into distributed EA techniques to develop advanced, coordinated countermeasures against the entire kill chain from far left of launch through terminal phase; components of this research will also include hardware/software payload re-configurability, multi-functionality and heterogeneity in low size, weight and power formats. - Continue research into developing Artificial Intelligence (AI)-generated tactics against modern and emerging radar sources to improve naval mission effectiveness. - Continue research into heterogeneously integrated EW co-processors to enable real-time ES and EA effects across wide bandwidths.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into wide bandwidth adaptable front-end technologies with improved simultaneous transmit and receive capabilities for survivability in a contested and congested electromagnetic spectrum. - Initiate research into techniques for sharing spectrum knowledge across distributed manned and unmanned platforms in a congested electromagnetic spectrum environment. - Initiate development of coordinated EW techniques between RF and Electro-Optic/Infrared (EO/IR) transmitters and receivers for single and distributed platforms. Electromagnetic Warfare: - Continue research applied research efforts that cover the development of new technologies and techniques for Electronic Support (ES), Electronic Attack (EA), and supporting technologies in Electromagnetic Warfare (EmW) Technologies. Passive ES technologies are developed to detect, deinterleave, classify, identify, geolocate, provide situational awareness, and queue EA systems. Active EA technologies are developed to counter the capability of the adversary to detect, locate, target and track U.S. and friendly forces. It also includes the development of advanced signal processing and receiver technologies and the development of an electromagnetic responses to include offboard decoys, onboard electronic attack, and resources required to coordinate an integrated response.					
FY 2027 Base Plans: Electronic Warfare: - Continue research in federated, coordinated, and integrated Electronic Warfare (EW) systems for the development of distributed EW technologies for Electronic Surveillance (ES), decoys and countermeasures, and Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance and Targeting (C4ISRT). This EW research includes Electronic Protection (EP) for our own weapons and Command, Control, Communications, Computers, Cyber Defense, Intelligence, Surveillance and Reconnaissance (C5ISR) systems allowing them to operate in a heavily contested environment. - Continue research into developing Artificial Intelligence (AI)-generated tactics against modern and emerging radar sources to improve naval mission effectiveness. - Continue research and development in the area of hard-kill and soft-kill coordination and planning. - Continue research into simultaneous multi-spectral (Radio Frequency (RF) and optical) countermeasure development to increase survivability across the entire electromagnetic spectrum and continue development of coordinated EW techniques between RF and Electro-Optic/Infrared (EO/IR) transmitters and receivers for single and distributed platforms.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development and implementation of combined EW and cyber effects to increase the reach and effectiveness of each domain in support of distributed maritime operations. - Continue research into distributed EA techniques to develop advanced, coordinated countermeasures against the entire kill chain from far left of launch through terminal phase; components of this research will also include hardware/software payload re-configurability, multi-functionality and heterogeneity in low size, weight and power formats. - Continue research into wide bandwidth adaptable front-end technologies with improved simultaneous transmit and receive capabilities for survivability in a contested and congested electromagnetic spectrum. - Continue research into techniques for sharing spectrum knowledge across distributed manned and unmanned platforms in a congested electromagnetic spectrum environment. - Complete research into heterogeneously integrated EW co-processors to enable real-time ES and EA effects across wide bandwidths. Electromagnetic Warfare: - Continue research applied research efforts that cover the development of new technologies and techniques for Electronic Support (ES), Electronic Attack (EA), and supporting technologies in Electromagnetic Warfare (EmW) Technologies. Passive ES technologies are developed to detect, deinterleave, classify, identify, geolocate, provide situational awareness, and queue EA systems. Active EA technologies are developed to counter the capability of the adversary to detect, locate, target and track U.S. and friendly forces. It also includes the development of advanced signal processing and receiver technologies and the development of an electromagnetic responses to include offboard decoys, onboard electronic attack, and resources required to coordinate an integrated response. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 reflects increased investments in both distributed EW and cognitive-based EW research to improve effectiveness against modern and future agile radar and anti-ship missile threats.					
Title: EO/IR Sensor Technologies	11.718	6.706	11.505	0.000	11.505

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The overarching objective is to develop technologies that enable affordable, wide area, persistent surveillance optical architectures. Included are modeling and simulation required to support the development of these technologies. Efforts will also include the development of optical RF components, infrared technologies including lasers and focal plane arrays using narrow bandgap semiconductors. The current specific objectives are: - Optically Based Terahertz (THz) and Millimeter Wave (MMW) Distributed Aperture Systems: Develop Optically Based Terahertz (THz) and Millimeter Wave distributed aperture systems for imaging through clouds, fog, haze and dust on air platforms. - Wide Area Optical Architectures: Develop wide area optical architectures for persistent surveillance for severely size constrained airborne applications. - Hyperspectral sensors and processing: Develop visible, shortwave Infrared (IR), mid-wave IR, and long-wave IR hyperspectral sensors, along with processing algorithms to detect anomalies and targets. - Coherent Laser Radar (LADAR): Develop and improve components for LADAR applications including fiber lasers, coherent focal planes, and advanced processing. - Autonomous and Networked sensing: Develop algorithms and processing that supports autonomous sensing for Unmanned Autonomous Vehicles (UAV) platforms and that supports networked sensing over multiple sensors and/or sensor platforms. ***FY 2026 Plans:*** EO/IR Sensor Technologies: - Continue efforts to develop and test optical architectures to demonstrate simultaneous wide Field of View (FOV) and high-resolution imaging for search, detection, classification, identification and targeting functions. - Continue research and development of novel Intelligence, Surveillance and Reconnaissance (ISR) and counter-ISR applications with tailored optical beams for diffraction-free, atmospheric turbulence-immune propagation. - Continue to develop novel techniques for Electro-Optic/Infrared (EO/IR) countermeasures to detect, track and/or jam sensors. - Continue demonstration and testing of real-time combat Identification (ID) algorithms for detecting and tracking simultaneous targets from networked, high-resolution, wide field of view, and persistent surveillance systems. - Continue research into extreme low light imaging cameras built using low-cost silicon foundry services as a way to provide all domain imaging for some missions or platforms that can't afford infrared sensors.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development of advanced coherent imaging systems and beam steering for software defined multi-use optical apertures as a way to improve multi-function systems. - Initiate research into metasurface-based flat optics for improved infrared imaging performance. - Initiate research in photonic techniques for readout, Input/Output (I/O) processing and computing. - Initiate research in using novel passive and active polarization features and states to improve target resolution, sensitivity, and clutter mitigation. Electromagnetic Warfare: - Continue the development of Electro Optical/Infrared Technology. The purpose of this thrust is to expand the state-of-the-art in Electro Optical/Infrared (EO/IR) Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and supporting technologies. The goal will be to develop innovative EO/IR sensing paradigms, components, and signal processing techniques to insure full EO/IR spectrum superiority. Capabilities are pursued in multispectral, hyperspectral, and hypertemporal EO/IR modalities as well as the fusion of these with other Electronics Intelligence (ELINT) and signals intelligence (SIGINT) modalities to locate hidden/ concealed targets and other hard-to-find objects. This effort is an expansion of previously discussed efforts to develop Electro-Optical/Infra-Red (EO/IR) and Radio Frequency (RF) technologies to improve imaging, target identification, threat detection, and engagement capabilities for the war fighter. - Continue the development of technology for new and enhanced naval capabilities based on the creation, transmission, modulation and detection of electromagnetic waves throughout the ultraviolet, visible and infrared spectral regions in Optical Technologies. Technologies developed will include concepts and devices for emitting light such as lasers and light emitting diodes; for transmission such as turbulence mitigation and multispectral optical materials; for modulation such as amplifiers and switches; for detection such as multi-spectral, hyper-spectral and tunable focal planes, single photon detectors, and event-based sensors. New signal processing techniques and the application of artificial intelligence will be developed to enable naval applications.					
FY 2027 Base Plans: EO/IR Sensor Technologies: - Continue efforts to develop and test optical architectures to demonstrate simultaneous wide Field of View (FOV) and high-resolution imaging for search, detection, classification, identification and targeting functions. - Continue research and development of novel Intelligence, Surveillance and Reconnaissance (ISR) and counter-ISR applications with tailored optical beams for diffraction-free, atmospheric turbulence-immune propagation.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to develop novel techniques for Electro-Optic/Infrared (EO/IR) countermeasures to detect, track and/or jam sensors. - Continue demonstration and testing of real-time combat Identification (ID) algorithms for detecting and tracking simultaneous targets from networked, high-resolution, wide field of view, and persistent surveillance systems. - Continue research into extreme low light imaging cameras built using low-cost silicon foundry services to enable cost effective and available all domain imaging. - Continue development of advanced coherent imaging systems and beam steering for software defined multi-use optical apertures as a way to improve multi-function systems. - Continue research into metasurface-based flat optics for improved infrared imaging performance. - Continue research in photonic techniques for readout, low loss interconnects and 1D/2D/3D coupling techniques, Input/Output (I/O) processing, computing. - Continue research in using novel passive and active polarization features and states to improve target resolution, sensitivity, and clutter mitigation. Electromagnetic Warfare: - Continue the development of Electro Optical/Infrared Technology. The purpose of this thrust is to expand the state-of-the-art in Electro Optical/Infrared (EO/IR) Intelligence, Surveillance, Reconnaissance and Targeting (ISRT) and supporting technologies. The goal will be to develop innovative EO/IR sensing paradigms, components, and signal processing techniques to insure full EO/IR spectrum superiority. Capabilities are pursued in multispectral, hyperspectral, and hypertemporal EO/IR modalities as well as the fusion of these with other Electronics Intelligence (ELINT) and signals intelligence (SIGINT) modalities to locate hidden/concealed targets and other hard-to-find objects. This effort is an expansion of previously discussed efforts to develop Electro-Optical/Infra-Red (EO/IR) and Radio Frequency (RF) technologies to improve imaging, target identification, threat detection, and engagement capabilities for the war fighter. - Continue the development of technology for new and enhanced naval capabilities based on the creation, transmission, modulation and detection of electromagnetic waves throughout the ultraviolet, visible and infrared spectral regions in Optical Technologies. Technologies developed will include concepts and devices for emitting light such as lasers and light emitting diodes; for transmission such as turbulence mitigation and multispectral optical materials; for modulation such as amplifiers and switches; for detection such as multi-spectral, hyper-spectral and tunable focal planes, single photon detectors, and event-based sensors. New signal processing techniques and the application of artificial intelligence will be developed to enable naval applications. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY2026 to FY 2027 is due to an increased focus being directed in the area of EO/IR Sensor Technology vice other areas.					
Title: Navigation Technology ***Description:*** The overarching objective of this activity is to develop technologies that enable the development of affordable, effective and robust Position, Navigation and Timing (PNT) capabilities using non-Global Positioning System (GPS) navigation devices, and atomic clocks. This project will increase the operational effectiveness of U.S. Naval units. Emphasis is placed on GPS Anti-Jam (AJ) Technology; Precision Time and Time Transfer Technology; and Non- GPS Navigation Technology (Inertial aviation system, bathymetry, gravity and magnetic navigation). The focus is on the mitigation of GPS electronic threats, the development of atomic clocks that possess unique long-term stability and precision, and the development of compact, low-cost Inertial Navigation Systems (INS). ***FY 2026 Plans:*** Navigation Technology: - Continue development on next generation atomic clocks to improve long-term stability and precision. - Continue development of earth magnetic anomaly maps for improved magnetic navigation. - Continue development of magnetic anomaly-aided navigation systems. - Continue development of celestial navigation and progress the development of onboard ephemeris. - Continue development of optical time transfer. - Continue development of modeling and simulation of PNT threats in the Live Virtual Constructive simulation. - Complete development of a gravity navigation system using a strap-down gravimeter. ***FY 2027 Base Plans:*** Navigation Technology: - Continue development on next generation atomic clocks to improve long-term stability and precision. - Continue development of earth magnetic anomaly maps for improved magnetic navigation. - Continue development of magnetic anomaly-aided navigation systems. - Continue development of celestial navigation and progress the development of onboard ephemeris. - Complete development of optical time transfer. - Complete development of modeling and simulation of PNT threats in the Live Virtual Constructive simulation.	14.248	12.792	10.986	0.000	10.986

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate development of navigating unmanned aerial system with cellular. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects reduced investments in Navigation Technology Applied Research to meet higher priority Navy requirements.					
Title: Solid State Electronics	6.816	7.337	5.087	0.000	5.087
Description: The overarching objective of this activity is to develop higher performance components and subsystems for all classes of military Radio-Frequency (RF) systems that are based on solid state physics. These improved components are based on both Silicon (Si) and compound semiconductors (especially the wide bandgap materials and narrow bandgap materials), low and high temperature superconductors, novel nanometer scale structures and materials. Components addressed by this activity emphasize the MMW and Submillimeter Wave (SMMW) regions with an increasing emphasis on devices capable of operating in the range from 50 Gigahertz (GHz) to 10 Terahertz (THz). The functionality of the technology developed cannot be obtained through Commercial-Off- The-Shelf (COTS) as a result of the simultaneous requirements placed on power, frequency, linearity, operational and instantaneous bandwidth, weight, and size. Effort will involve understanding the properties of engineered semiconductors as they apply to quantum information science and technology. ***FY 2026 Plans:*** Solid-State Electronics: - Continue metal nitride heterostructure mm-wave device investigations. - Continue research of solid-state devices for high frequency analog and digital operation; high efficiency, highly linear amplifiers for microwave, millimeter-wave, low-noise, and power applications - Continue development and transition of nitrogen-polar based High-Electron-Mobility Transistor (HEMT) technology for advanced linear receivers and efficient transmitters. - Continue development of superconducting GaN/niobium nitride heterostructures for Josephson junctions and Millimeter Wave (MMW) resonator circuits. - Continue Millimeter Wave (MMW) to Terahertz (THz) plasmonic photomixer-based focal plane. - Continue relaxed III-nitride channel mm-wave N-polar device development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue integrated circuit development in conventional superconductors and Gallium Nitride (GaN) as platforms for quantum-based functional components. - Continue low-cost substrate GaN technology for ubiquitous mm-wave transceivers deployment. - Continue development of high figure of merit Nitrogen-polar GaN Transmit/Receive (T/R) switches. - Continue evaluation of epitaxial High overtone Bulk Acoustic Resonators (epi-HBARs) integrated in metal nitride and III-Nitride Heterostructures. - Continue in Radio-Frequency (RF) Solid State Technologies which will develop technologies to ensure dominance of the RF electromagnetic spectrum from megahertz frequencies through the terahertz regime. Investments are focused to realize significant improvements in power, bandwidth, efficiency, sensitivity, linearity, dynamic range, and agility in a cost effective manner. Solutions emphasizing efficiency, compactness, and affordability are emphasized in order to address prime power constraints imposed on both large platforms and distributed autonomous systems operating solely or in a swarm environment. This is an expansion on previously discussed efforts towards the development of new types of quantum-based sensors for the measurement of motion and fields, which combine high sensitivity with features that improve the practicality of the technologies, to include continuous, high-bandwidth measurement, and low Size Weight and Power (SWaP). - Continue in Quantum Information Technologies. The goal of this area is to exploit the quantum principles of superposition, entanglement, and nonclassical correlation to provide sensors, communications technologies, and computation/simulation techniques that are superior to those available with conventional technologies. Areas of research include but are not limited to sensors that provide calibration-free and/or quantum-limited measurement of fields, forces, motion, and time; communications and networking technologies based on nonclassical electromagnetic fields; and methods for employing quantum information processing to address computational challenges that are infeasible for classical computers.					
FY 2027 Base Plans: Solid State Electronics: - Continue metal nitride heterostructure mm-wave device investigations. - Continue research of solid-state devices for high frequency analog and digital operation; high efficiency, highly linear amplifiers for microwave, millimeter-wave, low-noise, and power applications. - Continue development and transition of nitrogen-polar based High-Electron-Mobility Transistor (HEMT) technology for advanced linear receivers and efficient transmitters. - Continue relaxed III-nitride channel mm-wave N-polar device development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue low-cost substrate Gallium Nitride (GaN) technology for ubiquitous mm-wave transceivers deployment. - Continue development of high figure of merit Nitrogen-polar GaN Transmit/Receive (T/R) switches. - Continue evaluation of epitaxial High overtone Bulk Acoustic Resonators (epi-HBARs) integrated in metal nitride and III-Nitride Heterostructures. - Continue in Radio-Frequency (RF) Solid State Technologies which will develop technologies to ensure dominance of the RF electromagnetic spectrum from megahertz frequencies through the terahertz regime. Investments are focused to realize significant improvements in power, bandwidth, efficiency, sensitivity, linearity, dynamic range, and agility in a cost effective manner. Solutions emphasizing efficiency, compactness, and affordability are emphasized in order to address prime power constraints imposed on both large platforms and distributed autonomous systems operating solely or in a swarm environment. This is an expansion on previously discussed efforts towards the development of new types of quantum-based sensors for the measurement of motion and fields, which combine high sensitivity with features that improve the practicality of the technologies, to include continuous, high-bandwidth measurement, and low Size Weight and Power (SWaP). - Continue in Quantum Information Technologies. The goal of this area is to exploit the quantum principles of superposition, entanglement, and nonclassical correlation to provide sensors, communications technologies, and computation/simulation techniques that are superior to those available with conventional technologies. Areas of research include but are not limited to sensors that provide calibration-free and/or quantum-limited measurement of fields, forces, motion, and time; communications and networking technologies based on nonclassical electromagnetic fields; and methods for employing quantum information processing to address computational challenges that are infeasible for classical computers. - Complete development of superconducting GaN/niobium nitride heterostructures for Josephson junctions and Millimeter Wave (MMW) resonator circuits. - Complete Millimeter Wave (MMW) to Terahertz (THz) plasmonic photomixer-based focal plane. - Complete integrated circuit development in conventional superconductors and Gallium Nitride (GaN) as platforms for quantum-based functional components.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY 2026 to FY 2027 reflects reduced investments in Solid State Electronics Applied Research to meet higher priority Navy requirements.					
Title: Surveillance Technology	16.560	14.032	7.738	0.000	7.738
Description: The overarching objective of this activity is to develop advanced sensor and sensor processing systems for continuous, high volume, theater-wide air and surface surveillance, battle group surveillance, real time reconnaissance and ship defense. Major technology goals include long-range target detection and discrimination, Target Identification (ID) and fire control quality target tracking in adverse weather, background clutter and electronic countermeasure environments, affordable apertures, distributed sensing systems, and includes modeling and simulation required to support the development of these technologies. The current specific objectives are: 1) Radar Architectures, Sensors, and Software which address Ballistic Missile and Littoral Requirement Shortfalls: Develop radar architectures, sensors, and software, which address Ballistic Missile and Littoral requirement shortfalls including: sensitivity; clutter rejection; and flexible energy management. 2) Algorithms, Sensor Hardware, and Signal Processing Techniques for Automated Radar Based Contact Mensuration and Feature Extraction: Develop algorithms, sensor hardware, and signal processing techniques for automated radar based contact mensuration and feature extraction in support of asymmetric threat classification and persistent surveillance to address naval radar performance shortfalls caused by man-made jamming and Electronic Counter Measures (ECM), unfavorable maritime conditions, and atmospheric and ionosphere propagation effects. 3) Software and Hardware for a Multi-Platform, Multi-Sensor Surveillance System: Develop software and hardware for a multi-platform, multi-sensor surveillance system for extended situational awareness of the battlespace. ***FY 2026 Plans:*** Surveillance Technology: - Continue efforts to develop affordable and scalable advanced antenna apertures. - Continue efforts to develop electronics and signal processing to enable Radio Frequency (RF) agility and waveform diversity to provide enhanced capability to find, fix, track, target, and assess targets and threats as well as provide automatic target identification. - Continue efforts on methods to mitigate Electronic Attack (EA) and Electromagnetic Interference (EMI) to RF sensors and networks. - Continue development of hardware and software for arbitrary waveform generation for agile radar systems. - Continue development of novel field sensors and transducers for future radar architectures.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue effort focused on novel signal processing architectures for phased array radar systems that efficiently implement non-traditional radar algorithms. - Continue development of distributed aperture radar systems with improved spatial and waveform agility. - Complete development of front-end components and phased array architectures that enable concurrent wideband radar and Electronic Support (ES) functions. - Initiate efforts for integrating high-power microwave switches into beam-agile reflect-array architectures. Electromagnetic Warfare: - Continue research into Radar Technologies. The goal is to conduct applied research to broadly expand the state-of-the-art capabilities of radar systems across the RF spectrum, from High Frequency (HF) Over the Horizon (OTH) radars to Millimeter Wave (MMW) radars, and encompasses enabling technologies, architectures, and algorithms. Further, it develops concepts, techniques, and technologies to advance critical capabilities in radar signal processing, waveform design, environmental characterization & adaptation, and provide robust electronic protection of radar systems from adversary electronic attack This is an expansion on previous efforts into the technology base for RF surveillance white using active and passive monostatic and distributed sensor concepts.					
FY 2027 Base Plans: Surveillance Technology: - Continue efforts to develop affordable and scalable advanced antenna apertures. - Continue efforts to develop electronics and signal processing to enable Radio Frequency (RF) agility and waveform diversity to provide enhanced capability to find, fix, track, target, and assess targets and threats as well as provide automatic target identification. - Continue efforts on methods to mitigate Electronic Attack (EA) and Electromagnetic Interference (EMI) to RF sensors and networks. - Continue development of hardware and software for arbitrary waveform generation for agile radar systems. - Continue effort focused on novel signal processing architectures for phased array radar systems that efficiently implement non-traditional radar algorithms. - Continue development of distributed aperture radar systems with improved spatial and waveform agility. - Continue efforts to integrate high-power microwave switches into beam-agile reflect-array architectures, focusing on scaling and integration challenges. - Complete development of novel field sensors and transducers for future radar architectures.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Electromagnetic Warfare: - Continue research into Radar Technologies. The goal is to conduct applied research to broadly expand the state-of-the-art capabilities of radar systems across the RF spectrum, from High Frequency (HF) Over the Horizon (OTH) radars to Millimeter Wave (MMW) radars, and encompasses enabling technologies, architectures, and algorithms. Further, it develops concepts, techniques, and technologies to advance critical capabilities in radar signal processing, waveform design, environmental characterization & adaptation, and provide robust electronic protection of radar systems from adversary electronic attack This is an expansion on previous efforts into the technology base for RF surveillance white using active and passive monostatic and distributed sensor concepts. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects reduced investments in Surveillance Technology Applied Research to meet higher priority Navy requirements.					
Title: Naval Space Sensors and Effects	0.000	4.805	3.983	0.000	3.983
Description: The objective of this activity is to conduct applied research, development, and experimentation of key technology enablers that provide effective and resilient Intelligence, Surveillance, Reconnaissance & Targeting (ISRT) capabilities as affordable and proliferated space-borne sensors for littoral & maritime environments. This project will investigate, create, and evaluate technologies & techniques that increase the operational tactical effectiveness and survivability of U.S. & Allied Naval Forces against peer & near-peer competitors. Specifically, emphasis is placed on: 1) remote sensing, tracking & identification of naval-centric threats; 2) autonomy & multi-platform collaboration between Naval Forces & ISRT satellite constellations for executing naval missions; 3) direct & dynamic linkages between ISRT satellites and Naval Forces supporting tactical engagements; 4) machine learning, intelligent edge analytics, and near-optimal implementation of machine-generated Tactics, Techniques & Procedures (TTPs) between ISRT satellites and Naval Forces at relevant tactical timescales; and 5) secure and trusted on-orbit processing techniques that reduces the computational & communications burden on deployed Naval Forces. In addition to developing ISRT capabilities, this project will investigate, create, and evaluate technologies & techniques that generate or mitigate space & atmospheric effects that degrade the effectiveness of using ISRT constellations for tactical applications. Specifically, emphasis is placed on 6) identifying, understanding, implementing, and mitigating electromagnetic					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
effects & techniques that improve, or reduce the performance of ISRT constellations and the impact on Naval Forces. ***FY 2026 Plans:*** Sensor Technology: - Initiate applied research for investigating & developing: 1) distributed multi-band radio frequency (RF) 3D sensor devices for detecting and tracking challenging naval threats; 2) distributed & adaptive optical 3D sensor devices for detecting and tracking naval threats during all-weather & day/night conditions; and 3) machine learning algorithms that generate autonomous task planning & de-confliction between multiple ISRT satellites observing a defined Area-of-Interest. Effects Technology: - Initiate applied research for investigating & creating: 1) computationally fast & lightweight high-fidelity physics algorithms for predicting and simulating atmospheric distortion effects on electromagnetic signal propagation caused by various plasma phenomena; and 2) machine learning algorithms & techniques that mitigate and reconstruct distorted electromagnetic signals. ***FY 2027 Base Plans:*** Sensor Technology: - Continue research into distributed multi-band RF 3D sensor devices for detecting and tracking challenging naval threats. - Continue research into distributed & adaptive optical 3D sensor devices for detecting and tracking naval threats during all-weather & day/night conditions. - Continue research into Artificial Intelligent & machine learning techniques that generate autonomous task planning and de-confliction between multiple ISRT satellites observing a defined Area-of-Interest. - Initiate Agile development of prototype algorithms & software containers that can be deployed on small form-factor satellites for on-orbit experimentation. - Initiate research into computationally fast & extremely lightweight signal processing techniques for RF & optical sensor devices. Effects Technology:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research and initiate development of computationally fast, parallelizable & lightweight high-fidelity physics algorithms for predicting and simulating electromagnetic (EM) signal distortion effects caused by various plasma phenomena. - Continue research in machine learning techniques that mitigate or recover distorted EM signals. - Initiate development of proof-of-concept algorithms for laboratory and field experimentation. - Initiate research into understanding, creating, and measuring exotic plasma states & sources in endo- and exo-atmospheric environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Vacuum Electronics Power Amplifiers	1.340	0.618	0.000	0.000	0.000
Description: The overarching objective of this activity is to develop Millimeter Wave (MMW) and sub-MMW power amplifiers for use in Naval all-weather radar, surveillance, reconnaissance, electronic attack, and communications systems. The technology developed cannot, for the most part, be obtained through Commercial Off The Shelf (COTS) as a result of the simultaneous requirements placed on power, frequency, bandwidth, weight, and size. Responding to strong interests from the various user communities, efforts are focused on the development of technologies for high-data-rate communications, electronic warfare and high-power radar applications at Millimeter Wave (MMW) and upper-MMW regime. The emphasis is placed on achieving high power at high frequency in a compact form factor. Technologies include utilization of spatially distributed electron beams in amplifiers, such as sheet electron beams and multiple-beams, and creation of simulation based design methodologies based on physics-based and geometry driven design codes. The current specific objectives are: - High Power Millimeter and Upper Millimeter Wave Amplifiers: Develop science and technology for high power millimeter and upper millimeter wave amplifiers including high current density diamond cathodes, sheet and multiple electron beam formation and mode suppression techniques in overmoded structures. - Lithographic Fabrication Techniques: Develop lithographic fabrication techniques for upper-millimeter wave amplifiers. - Accurate and Computationally Effective Device-Specific Multi-Dimensional Models for Electron Beams: Develop accurate and computationally effective device-specific multi-dimensional models for electron beam					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
generation, large-signal and stability analysis to simulate device performance and improve the device characteristics. ***FY 2026 Plans:*** - Complete the development of Radio Frequency (RF) Vacuum Technologies. The goal of this thrust is to develop high-performance vacuum electron devices to enable future Navy RF systems and ensure Navy electromagnetic spectrum dominance across the microwave and millimeter-wave frequency bands, nominally 3 GHz - 300 GHz. These systems are important for defense applications such as electronic warfare, high-resolution radar, high-data-rate communications, and RF power beaming. This is an expansion of efforts towards the development of Millimeter Wave and sub-MMW power amplifiers for use in Naval all-weather radar, surveillance, reconnaissance, electronic attack, and communications systems. Efforts are focused on the development of technologies for high-data-rate communications, electronic warfare and high-power radar applications at MMW and sub-MMW regimes. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 reflects the completion of research efforts in the area of vacuum electronics power amplifiers.					
Title: Signal Processing for Naval Applications ***Description:*** The objective of this activity is to improve signal processing for detection and imaging of targets in man-made and natural clutter. ***FY 2026 Plans:*** - Initiate polarization-based radar processing for clutter rejection. ***FY 2027 Base Plans:*** Signal Processing for Naval Applications: - Continue the development of polarization-based radar processing for ocean clutter rejection.	0.000	1.975	1.756	0.000	1.756

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 0000 / *Electromagnetic Systems Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate the implementation of real time polarization-based algorithms for radar signal processing. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Accomplishments/Planned Programs Subtotals	85.358	79.929	74.603	0.000	74.603

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602271N / *Electromagnetic Systems Applied Research*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	10.619	68.540	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	79.159

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Future Radio Frequency Digital Array Technology ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop future radio frequency digital array technology.	0.000	48.268
Congressional Add: Dark Swarm in Denied Environments ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop dark swarm technology for denied environments.	0.000	3.861
Congressional Add: PFAS Free Composite Radomes ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Design and develop PFAS free composite radomes for improved performance.	0.000	4.827
Congressional Add: Miniaturized full spectrum hyperspectral sensor ***FY 2025 Accomplishments:*** Develop and deliver a full-spectrum hyperspectral imagery (HSI) collection and analysis suite applicable for use from small unmanned aerial vehicles (UAVs). ***FY 2026 Plans:*** N/A	2.896	0.000
Congressional Add: Advanced Antenna Tech for E-2D ***FY 2025 Accomplishments:*** Develop dual-band antenna technologies and electronics for the next generation E-2D. ***FY 2026 Plans:*** Continue development of dual-band antenna technologies and electronics for the next generation E-2D.	7.723	11.584
Congressional Adds Subtotals	10.619	68.540

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602271N / *Electromagnetic Systems Applied Research*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602435N *I Ocean Wrfghtg Env Applied Res*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	111.321	117.471	64.693	-	64.693	67.859	69.617	68.643	69.356	Continuing	Continuing
0000: *Ocean Wrfghtg Env Applied Res*	0.000	78.018	81.270	64.693	-	64.693	67.859	69.617	68.643	69.356	Continuing	Continuing
9999: *Congressional Adds*	0.000	33.303	36.201	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	69.504

A. Mission Description and Budget Item Justification

Assuring access to the global maritime domain is ensured by technologies that reliably and accurately sense and predict the ocean, atmosphere and littoral environment. Coordinated distributed maritime operations is only possible when timely, actionable information is delivered to commanders. This program element (PE) addresses applied research to develop and exploit tactical understanding of the maritime environment to maintain U.S. maritime superiority and ensure national security. Research performed in this PE transforms basic oceanographic, meteorological, ionospheric, geologic, acoustic, optical and chemical research into predictive models and technologies that provide new or enhanced warfare capabilities for the Battlespace Environment (BSE). The objectives of this program are met through direct observation of the physical environment by shipboard, airborne, and space-based platforms, piloted, remotely piloted, and fully autonomous; assimilation of these observations into predictive environmental models; and provision of critical environmental knowledge to tactical decision aids.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602435N *I Ocean Wrfghtg Env Applied Res*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	113.430	81.270	86.290	-	86.290
Current President's Budget	111.321	117.471	64.693	-	64.693
Total Adjustments	-2.109	36.201	-21.597	-	-21.597
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.299			
• Congressional Rescissions	-	-			
• Congressional Adds	-	37.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	1.035	0.000			
• SBIR/STTR Transfer	-3.143	0.000			
• Program Adjustments	0.000	0.000	-21.597	-	-21.597
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *NSW Superiority*	0.000	4.827
Congressional Add: *Onboard Weather Forecasting for Afloat Naval Force*	0.000	1.931
Congressional Add: *Undersea Sensor Orchestration for Seafloor Mapping*	0.000	4.827
Congressional Add: *Modeling Water-Ice Interactions*	0.000	3.861
Congressional Add: *Undersea Battlefield Sensing*	0.000	3.861
Congressional Add: *Atmospheric River Research*	2.413	4.827
Congressional Add: *Naval installation climate change risk management*	2.413	0.000
Congressional Add: *Pacific Infrastructure for continuous engineering*	14.480	0.000
Congressional Add: *Ocean Acoustics for Monitoring*	6.757	0.000
Congressional Add: *intelligent autonomos systems for seabed warfare*	7.240	12.067
Congressional Add Subtotals for Project: 9999	33.303	36.201
Congressional Add Totals for all Projects	33.303	36.201

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602435N *I Ocean Wrfghtg Env Applied Res*

Change Summary Explanation

Funding: The FY 2027 budget request was reduced by $21.597 million to account for reductions to Ocean warfighting Env Applied Research for higher naval priorities, as well as PE rebalancing. Funding was also realigned out of PE 0602435N to 0601153N PU 1398 as a consolidation of resources promoting transparency into the Navy's Research Vessels.

Schedule: No significant change.

Technical: No significant change.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602435N / *Ocean Wrfghtg Env Applied Res*	Project (Number/Name) 0000 / *Ocean Wrfghtg Env Applied Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Ocean Wrfghtg Env Applied Res*	0.000	78.018	81.270	64.693	-	64.693	67.859	69.617	68.643	69.356	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project provides the foundational environmental knowledge for undersea, surface and air-based warfighting technologies and effective operations anywhere on the globe, as well as the operation of unattended sensors and unmanned air, surface and underwater vehicles. This project includes the Navy contribution to broader federal research such as the National Oceanographic Partnership Program (NOPP), efforts aimed at understanding and predicting the impacts of underwater sound on Marine species, and efforts to improve extended range environmental prediction through coupled Earth system models. Major efforts of this project are devoted to gaining real-time knowledge of the Battlespace Environment (BSE), understanding the variability between processes in the world's ocean, atmosphere and coastal regions, and providing the on-scene commander with the capability to exploit the environment to tactical, operational, and strategic advantage. Research results are transitioned to the Fleet Numerical Meteorology and Oceanography Center and to the Naval Oceanographic Office where they are used to provide timely information about the natural environment for all fleet operations. Efforts include ocean and atmospheric analysis and prediction for real-time description of the operational environment from near space to the sub-seafloor, shallow water acoustics, sensors for undersea surveillance and weapon systems, and influences of the natural environment on Mine Countermeasures, Naval Mining, Anti-Submarine Warfare (ASW), Information Warfare, and Naval Special Warfare systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Coastal Geosciences/Optics	9.387	9.231	5.721	0.000	5.721
Description: The Coastal Geosciences / Optics activity develops knowledge of the littoral, nearshore and riverine environments in which physical, acoustical and optical processes are dominated by the presence of the sea or river bed and air-water interface. Predictive environmental models, custom climatological databases, adaptive sampling schemes, technologies for nearshore observations and advanced remote sensing capabilities provide critical foundational information for Naval Special Warfare, Mine and Expeditionary Warfare and Amphibious operations. This Program emphasizes field research in navally relevant environments, including many that require research outside the U.S. ***FY 2026 Plans:*** - Continue Satellite Based Sensing to improve the world's global bathymetry map from satellite data. Specific new efforts will utilize ICESAT for shoreline digital elevation models and connect with new investigations and methods extending altimetry-based seabed models up onto the continental shelves. - Continue efforts focused on determining bathymetry from satellite based-remote sensing for shallow muddy and turbid waters.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into exploiting various geoscience and optical environmental phenomena in the littoral ocean investigate and develop a novel remote sensing technology by exploring advanced machine learning methods for multi- spectral (optical and passive microwave) satellite observations to provide a high-resolution, holistic land surface analysis of surface vegetation and soil parameters and quantify their impact on numerical weather prediction (NWP) models. - Continue Satellite Based Sensing to improve the world's global bathymetry map from satellite data. Specific new efforts will utilize ICESAT for shoreline digital elevation models and connect with new investigations and methods extending altimetry-based seabed models up onto the continental shelves. Continue efforts focused on determining bathymetry from satellite based-remote sensing for shallow muddy and turbid waters. - Continue Inner Shelf Processes studies of non-hydrostatic modeling of inner shelf processes, including internal waves and fronts. Initiate a systematic study of biases introduced into the inner shelf sea-surface-temperature field by the global ocean and atmospheric models. - Continue Remote Sensors optimization studies of adaptive sampling in the littorals using small unmanned platforms (air, surface, submerged). - Continue Optics studies of underwater image prediction. -Continue research to predict physical, geological, geochemical, geo-acoustic and geotechnical properties of the seafloor and coast - Continue Sonar technology development to observe and map bottom currents and bathymetry from drifting, bottom- following sensors. - Continue to build capabilities to predict topographic changes in sandy, coastal environments impacting traffic capability. - Continue to conduct research into exploiting various geoscience and optical environmental phenomena in the littoral ocean that will be investigated to develop a novel remote sensing technology by exploring advanced machine learning methods for multi-spectral (optical and passive microwave) satellite observations. This will					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
provide a high-resolution, holistic land surface analysis of surface vegetation and soil parameters and quantify their impact on Numerical Weather Prediction (NWP) models. - Continue to build capabilities to predict topographic changes in sandy, coastal environments impacting traffic capability. -Continue to focus on the development of suitable atmospheric correction, calibration, and optical inversion algorithm methods for the emerging and rapidly growing nano and microsatellite technologies. - Initiate research to predict physical, geological, geochemical, geo-acoustic and geotechnical properties of the seafloor and coast					
FY 2027 Base Plans: -Continue Satellite Based Sensing to improve the world's global bathymetry map from satellite data. Specific new efforts will utilize ICESAT for shoreline digital elevation models and connect with new investigations and methods extending altimetry-based seabed models up onto the continental shelves. -Continue Satellite Based Sensing to improve the world's global bathymetry map from satellite data. Specific new efforts will utilize ICESAT for shoreline digital elevation models and connect with new investigations and methods extending altimetry-based seabed models up onto the continental shelves. Continue efforts focused on determining bathymetry from satellite based-remote sensing for shallow muddy and turbid waters. -Continue to conduct research into exploiting various geoscience and optical environmental phenomena in the littoral ocean that will be investigated to develop a novel remote sensing technology by exploring advanced machine learning methods for multi-spectral (optical and passive microwave) satellite observations. This will provide a high-resolution, holistic land surface analysis of surface vegetation and soil parameters and quantify their impact on Numerical Weather Prediction (NWP) models. -Continue to build capabilities to predict topographic changes in sandy, coastal environments impacting traffic capability.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts focused on determining bathymetry from satellite based-remote sensing for shallow muddy and turbid waters. - Continue research into exploiting various geoscience and optical environmental phenomena in the littoral ocean investigate and develop a novel remote sensing technology by exploring advanced machine learning methods for multi- spectral (optical and passive microwave) satellite observations to provide a high-resolution, holistic land surface analysis of surface vegetation and soil parameters and quantify their impact on numerical weather prediction (NWP) models. - Complete Inner Shelf Processes studies of non-hydrostatic modeling of inner shelf processes, including internal waves and fronts. Initiate a systematic study of biases introduced into the inner shelf sea-surface-temperature field by the global ocean and atmospheric models. - Continue Remote Sensors optimization studies of adaptive sampling in the littorals using small unmanned platforms (air, surface, submerged). - Continue Optics studies of underwater image prediction. - Continue Sonar technology development to observe and map bottom currents and bathymetry from drifting, bottom- following sensors. - Continue to build capabilities to predict topographic changes in sandy, coastal environments impacting traffic capability. -Continue to focus on the development of suitable atmospheric correction, calibration, and optical inversion algorithm methods for the emerging and rapidly growing nano and microsatellite technologies. -Continue research to predict physical, geological, geochemical, geo-acoustic and geotechnical properties of the seafloor and coast. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding decrease from FY 2026 to FY 2027 due to reduced research in inner Shelf Processes studies of non-hydrostatic modeling of inner shelf processes.					
Title: Marine Biology	3.480	3.549	2.492	0.000	2.492
Description: The Marine Biology (MB) program, formerly titled the Marine Mammals and Biology (MMB) Program in FY26 and prior, aims to provide a warfighting advantage across three key areas: 1) tactically and 2) operationally within the ocean battlespace through enhanced understanding of marine species distribution and abundance, and 3) strategically, by preserving Navy readiness and ensuring compliance with legal requirements during at-sea training and testing. The program supports basic and applied research and technology development to improve maritime domain awareness of marine species, enabling better characterization and prediction of their effects on naval systems (e.g., sonar performance). Improved domain awareness and Navy readiness at a large scale will ensure the U.S. Navy's at-sea testing and training requirements are informed by accurate, up-to-date, and comprehensive scientific data of the baseline conditions in which they operate. Furthermore, the MB program investigates the impacts of naval activities on marine species at the behavioral, physiological, ecological, and population levels ***FY 2026 Plans:*** - Continue Sound Effects Modeling research to quantify the behavioral and physiological effects on individual and population- level consequences of sound exposure on marine life. - Continue Marine Mammal research to design equipment and capability to quantify the gas management and kinetics in marine mammals to elucidate the mechanisms that enable marine mammals to dive to deep depths. - Continue to conduct research on Sound Reception Mechanisms in whales to advance our understanding of sound reception mechanisms in large whales including the anatomy surrounding the ear and the whole head. - Continue Sonar Exposure research into the stress response of marine mammals to sonar exposure, with an emphasis on quantifying the effects of prolonged exposure effects on immune system suppression, reproductive failure, accelerated aging, and slowed growth. - Initiate development of models and tools to link behavioral, physiological and population-level effects of disturbance in comprehensive model framework to understand single stressor population level effects in demonstration populations					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate development of methods, tools, and databases for data integration/fusion to provide new insight into marine species - Continue Marine Mammal Behavior research on potential effects of Navy sources on marine mammal behavior, life functions, vital rates, and population level effects ***FY 2027 Base Plans:*** - Continue Sound Effects Modeling research to quantify the behavioral and physiological effects on individual and population- level consequences of sound exposure on marine life. - Complete Marine Mammal research to design equipment and capability to quantify the gas management and kinetics in marine species to elucidate the mechanisms that enable marine animals to dive to deep depths. - Continue Sonar Exposure research into the stress response of marine species to sonar exposure, with an emphasis on quantifying the effects of prolonged exposure effects on immune system suppression, reproductive failure, accelerated aging, and slowed growth. - Continue marine species behavior research on potential effects of Navy sources on marine mammal behavior, life functions, vital rates, and population level effects - Continue to conduct research on Sound Reception Mechanisms in whales to advance our understanding of sound reception mechanisms in large whales including the anatomy surrounding the ear and the whole head. Continue development of models and tools to link behavioral, physiological and population-level effects of disturbance in comprehensive model framework to understand single stressor population level effects in demonstration populations Continue development of methods, tools, and databases for data integration/fusion to provide new insight into marine species ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding decrease from FY 2026 to FY 2027 is due to reduced research in Marine Mammal research to design equipment and capability to quantify the gas management and kinetics in marine species to elucidate the mechanisms that enable marine animals to dive to deep depths.					
Title: Marine Meteorology	18.959	25.115	26.713	0.000	26.713
Description: The Marine Meteorology and Space Weather activities develop observing technologies, predictive models, Numerical Weather Prediction (NWP) systems and Tactical Decision Aids (TDA) that describe the atmospheric and near space environments and their impacts on naval sensors and operations. This activity focuses on uniquely marine aspects of atmospheric science such as air-sea interaction, coupled ocean-atmosphere modeling, Electromagnetic (EM) and Electro-Optical (EO) propagation, coastal meteorology, Tropical Cyclone (TC) prediction, and thermosphere-ionosphere dynamics and prediction, especially in expeditionary regions that are otherwise under observed such as the maritime subtropics and the polar regions, and the use of remote sensing to obtain quantitative observations of atmospheric and ionospheric properties. Aspects of the atmospheric environment of particular interest include near-surface phenomena that affect refractivity, marine boundary layer dynamics that affect clouds, rain, visibility and fog, processes that control TC structure, track, and intensity, extended range prediction and the ability to make better decisions across the weather continuum, and coupling between the lower atmosphere and the thermosphere / ionosphere and how it affects tactical to regional High Frequency (HF) over the horizon radar and communication. Objectives of this activity are improved NWP systems and TDA that provides nowcast and forecast skill at global, regional, and tactical scales for operational support, sensor and system development, and performance prediction.					
FY 2026 Plans: Continue developing weather/extremes decision aids for ship routing, fuel efficiency, infrastructure protection. Continue field observations, quality control/analyses, data assimilation/modeling technologies. Continue Unified Data Assimilation across atmosphere, thermosphere, ocean, wave, sea ice. Continue applied research to increase knowledge content of remote sensing data, improve representation of processes, coupled systems, predictability, probabilistic forecasting, uncertainty. Develop techniques to obtain atmospheric data from sensors.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue improving Naval simulation/prediction of atmosphere/ocean processes across scales, quantify/ represent uncertainty. Improves forecast models/ensemble systems. Critical for boundary layer simulation, & emerging observational capabilities. Complete exploration of fleet EO/IR sensors for atmospheric aerosol, water vapor, and turbulence estimation for high energy laser applications. Continue developing low order models based on machine learning for efficient ensemble prediction systems. Continue research into improved analysis/prediction of Atmospheric Rivers & impacts on extreme weather in Navy/Marine Corps areas. Continue research into atmospheric gravity wave propagation into mesosphere from convection, coupling into Traveling Ionospheric Disturbances, & effects on radars & communications. Complete a study on forecast skill vs. lead time across model approaches for seamless decision support. Continue Unified Data Assimilation to improve technologies across atmosphere, thermosphere, ocean, wave, sea ice. Continue efforts focused on parameters affecting Radar, Radio Communications, Imaging Sensors, and Laser propagation in the marine environment for tactical decision aids. Continue to extend research of boundary layer processes, focusing on impact to state variables/gradients. Continue improved characterization of clouds, aerosols, and optical turbulence for high energy laser systems. Continue developing/improving tropical cyclone forecast models for rapid intensification. Shift to leveraging data, assimilation, algorithmic analysis for understanding. Continue efforts on design, performance, analysis, theory of numerical simulations representing atmospheric processes.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue to investigate land surface impacts on boundary layer processes using Navy models. ***FY 2027 Base Plans:*** - Continue the development of new decision aids that take weather and extremes into account for improved ship routing, fuel efficiency, and bases and infrastructure protection and optimization. - Continue collection of field observations; quality control and process-oriented analyses; and development of data assimilation and modeling technologies. Continue Unified Data Assimilation initiative to improve data assimilation technologies across the atmosphere, thermosphere, ocean, wave, and sea ice sub-disciplines - Continue applied research and studies aimed at increasing knowledge content of data from remote sensing and through-the-sensor systems as well as improving the representation of dynamical and physical processes, coupled atmosphere/thermosphere/ocean/wave/ice/land processes, atmospheric predictability, and methodologies for probabilistic forecasting and characterization of uncertainty. These studies include efforts to develop appropriate techniques to obtain atmospheric environmental data from airborne and space-borne sensors. - Continue to improve Naval simulation and prediction capabilities of the dynamic and thermodynamic processes in the atmosphere and ocean on a wide spectrum of scales, and to quantify and better represent the uncertainty in these predictions. This includes improvements to the forecast models, as well as improvements to ensemble forecast systems, which provide uncertainty estimates of forecasts and probabilistic predictions of particular events. As the Navy conducts a significant portion of its operations near the ocean surface up to a height of several thousand feet above the surface, in a region typically known as the atmospheric boundary layer, it is critical that our simulation and prediction capabilities of the dynamic and thermodynamic processes in this region, as well as new and emerging observational capabilities such as unmanned vehicles, are accurate - Continue the development of utilizing low order models based on machine learning techniques to provide advanced computational efficiency for large member ensemble prediction systems. - Continue research into improved analysis and prediction of Atmospheric Rivers and the impacts on extreme and hazardous weather internationally in areas of Navy and Marine Corps operations.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research into atmospheric gravity wave (AGW) propagation into the mesosphere from convective weather and coupling into Traveling Ionospheric Disturbances (TID) and the effects of these waves on OTH radars and VLF, HF and UHF communication. - Continue Unified Data Assimilation initiative to improve data assimilation technologies across the atmosphere, thermosphere, ocean, wave, and sea ice sub-disciplines - Continue efforts focused on parameters that affect Radar, Radio Communications, Imaging Sensors, and Laser propagation in the marine environment with the goal of representing the real current and forecast atmosphere in tactical decision aids. - Continue to extend research of boundary layer processes, focusing on impact to state variables and their gradients. - Complete improved characterization of clouds, aerosols, and optical turbulence as they affect propagation of high energy laser systems. - Complete development of improved tropical cyclone forecast models to more accurately predict the rapid intensification of strong tropical cyclones. -Initiate research to improve our observing data, data assimilation techniques, and algorithmic analysis of storm structure and character to better understand and predict phenomenology. - Continue efforts on the design, performance, analysis and underlying theory of global-to-tactical scale numerical simulations specifically designed to represent atmospheric environmental processes and phenomena. - Complete investigations on land surface impacts to predictability of boundary layer processes on weather from weekly to sub-seasonal timescales using Navy atmospheric models and predictability tools to quantify feedback and affects. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding increase from FY 2026 to FY 2027 is due to increased research in development of new decision aids that take weather and extremes into account for improved ship routing, fuel efficiency, and bases and infrastructure protection and optimization and the collection of field observations.					
Title: National Oceanographic Partnership Program (NOPP)	8.753	8.902	5.853	0.000	5.853
Description: This activity focuses on Navy investments in the National Oceanographic Partnership Program (NOPP). NOPP, established by the US Congress (Public Law 104-201) in FY97, is a unique collaboration among U.S. federal agencies involved in conducting, funding, or utilizing results of ocean research. NOPP's value to the Navy derives from the capacity of the partnership to enable and ensure multi-agency efforts where such collaboration enhances efficiency or effectiveness, reduces costs, or both. NOPP topics address scientific problems that cross agency missions, fall in gaps between agencies or are too large for any single agency to fund. ***FY 2026 Plans:*** - Continue National Oceanographic Partnership Program (NOPP) to focus topics of interest to multiple federal agencies that share ocean-related missions and are effectively investigated via partnerships. Topics include ocean, atmosphere, and coastal dynamical process studies; development of sensors, communications, and data acquisition approaches and methodologies for ocean research; modernization of ocean research and observation infrastructure; and studies of soundscapes in the ocean related to marine mammal research. - Continue Oceanographic Observations and Modeling studies focused on model verification, constraint of boundary conditions and fluxes of mass, heat and momentum across them (air-sea, deep ocean-seabed, land-sea), and responses to storm and / or persistent forcing. - Continue Space Based Sensors effort for the development and utilization of small space-based sensors for oceanographic and atmospheric dynamics research. - Next Generation Oceanographic sensors: Continue development of miniaturized, low-power, next generation sensors for ocean measurements including soft materials. - Continue hurricane coastal impact forecasting, including space-based remote sensing for multi-dimensional digital elevation models, suitable to initialize and ground-truth forecasts.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue investigation of global internal waves, model, theory and observation, from genesis or source to sink, using all available assets from in situ to space-based.					
FY 2027 Base Plans: - Continue National Oceanographic Partnership Program (NOPP) to focus topics of interest to multiple federal agencies that share ocean-related missions and are effectively investigated via partnerships. Topics include ocean, atmosphere, and coastal dynamical process studies; development of sensors, communications, and data acquisition approaches and methodologies for ocean research; modernization of ocean research and observation infrastructure; and studies of soundscapes in the ocean related to marine mammal research. - Continue Oceanographic Observations and Modeling studies focused on model verification, constraint of boundary conditions and fluxes of mass, heat and momentum across them (air-sea, deep ocean-seabed, land-sea), and responses to storm and / or persistent forcing. - Continue Space Based Sensors effort for the development and utilization of small space-based sensors for oceanographic and atmospheric dynamics research. Next Generation Oceanographic sensors: - Continue development of miniaturized, low-power, next generation sensors for ocean measurements including soft materials. - Continue investigation of global internal waves, model, theory and observation, from genesis or source to sink, using all available assets from in situ to space-based. - Complete hurricane coastal impact forecasting, including space-based remote sensing for multi-dimensional digital elevation models, suitable to initialize and ground-truth forecasts. -Initiate coupled ocean-atmosphere investigations, both deterministic and AI/ML, emphasizing utilization of ensemble forecasts of regional seas leveraging the earth system prediction capability. -Initiate studies of meso-scale and sub-mesoscale ocean circulation at scale, pairing large numbers of upper ocean profiling sensors and platforms and ocean surface signature evolution from satellite modalities; to					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
enable forecasting, traditionally or with AI/ML techniques, the subsurface ocean evolution solely from satellite observations. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due reduced research in hurricane coastal impact forecasting, including space-based remote sensing for multi-dimensional digital elevation models, suitable to initialize and ground-truth forecasts.					
Title: Task Force Ocean (formerly Ocean Acoustics) ***Description:*** The Task Force Ocean activity focuses on the impact of the natural ocean environment on acoustic wave phenomena in support of undersea warfare and underwater force protection operations. This activity studies underwater acoustic propagation, scattering from ocean boundaries, and ambient noise issues that impact the development and employment of acoustic systems. The littoral zone has been the ocean environment of greatest interest. Aspects of this environment, that greatly impact underwater acoustic systems, are the shallow water, the consequent closeness and physical significance of the ocean bottom, and the complexities inherent to rapid changes of the ocean structure. The objectives of this program are met through measuring, analyzing, modeling and simulating, and exploiting ocean acoustic factors to gain advantage over potential adversaries using undersea acoustic systems. Results of this activity support acoustic sensor and system development, performance prediction, and tactical decision aids. This activity will also focuses on efforts addressing research needs identified by Task Force Ocean that will enable tactical maneuver for the future submarine force. The efforts funded by this Program Element (PE) fall generally into two topic areas: Analysis and understanding of the impact of environmental conditions on sonar data, and the development of reduced order ocean-acoustic models to enable environmental awareness and prediction on forward platforms. ***FY 2026 Plans:*** Continue Atlantis II modeling/data analysis: understanding ocean processes (sound, ambient sound, physical, biological). Objectives: uncertainty tools (tactical aids), new sensor prototypes, novel sensing exploitation. Coupled/hybrid assimilation (numerical modeling/AI/ML) will be developed/tested. Continue efforts: data/modeling in Mid-Atlantic Ridge. Focus: algorithms for ocean/atmosphere/bottom properties affecting sound/detection, including ambient sound. Objectives: uncertainty tools (tactical aids).	26.846	24.108	19.200	0.000	19.200

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue Anti-Submarine Warfare: applied research developing improved ASW performance models/tactical aids to plan operations, evaluate systems, enable adaptive control. Continue Sensors development: ASW sensor/system models, realistic simulations, measures of effectiveness. Includes environmental knowledge, ocean dynamics/acoustics, ambient noise. Applied research: scattering/ propagation, through-sensor techniques, uncertainty, tactical tools. Enable awareness/exploitation by platforms: in situ sensing, sensor data inversion, tactical advantage. Informed by Task Force Ocean. Continue Passive Sonar: enhance Arctic passive sonar performance; prediction model, ice-characterization methods. Continue Environmental Acoustics: ensemble prediction products exploiting faster acoustics computations. Continue efforts: in-situ environmental parameter estimation; optimized sensing adapting in dynamic environments; uncertainty capture in system/tactical aids for ASW, MIW, Seabed Warfare. Continue development: parameterizations to predict breaking wave contribution to ambient noise, quantifying accuracy. Continue development/advances: ambient noise characterization, source estimation, data assimilation expansion, metric improvements in acoustic scenarios. Continue efforts: in-situ environmental parameter estimation; optimized sensing adapting in dynamic environments; uncertainty capture in system/tactical aids for ASW, MIW, Seabed Warfare. Continue efforts: transferring Atlantis II knowledge/algorithms to Mid-Atlantic Ridge efforts. Compare regions to test/validate AI/ML for seabed/acoustic prediction, based on machine learning where observations are unavailable. Tests include NRL's GPSM. ***FY 2027 Base Plans:*** - Continue Atlantis II modeling and data analysis efforts that focus on improved understanding of the complex relationships amongst a large number of ocean processes and variables that include sound propagation,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
ambient sound, ocean and atmosphere physical processes, and biological communities. The objectives to achieve include development of innovative tools that provide insight into uncertainty that may be suitable for transition to tactical decision aids. Objectives also include prototype development of new sensors and systems that address ocean observing and exploitation requirements from Naval Oceanography at large to the unit level, as well as novel exploitation of existing sensing infrastructure. Coupled / hybrid assimilation techniques that leverage a combination of numerical modeling and AI/ML will also be developed and tested using a variety of approaches including through the sensor collection and real time analysis. - Continue efforts centered on data collection and modeling in regions of the Mid-Atlantic Ridge and proxy regions. Specific efforts will focus on developing algorithms for improved understanding of the complex relationships amongst a number of ocean, atmosphere, and bottom properties that affect sound propagation and signal detection, including ambient sound. The objectives to achieve include development of innovative tools that provide insight into uncertainty that may be suitable for transition to tactical decision aids. - Continue Anti-Submarine Warfare effort to conduct applied research developing improved Anti-Submarine Warfare (ASW) performance assessment models and tactical decision aids to plan ASW operations, evaluate effectiveness of ASW systems, and enable environmental adaptive system control. - Continue Sensors development to provide Anti-Submarine Warfare (ASW) sensor and system performance models, realistic simulations, and measures of effectiveness. This includes incorporating and exploiting critical environmental knowledge and requires coupling ocean dynamics and acoustics, ambient noise characterization in the littorals. It also includes applied research in acoustic and optical scattering and propagation characterization, through-the-sensor measurement techniques for in situ environmental parameters, measurement and prediction of uncertainty, and development of tactical decision tools. Conduct research efforts to enable environmental awareness and tactical exploitation of the environment by forward naval platforms. Activities will include the development of technologies and algorithms to incorporate in situ environmental sensing into an on-scene environmental characterization capability, inversion of sensor data to infer the local environment, and the development of capabilities to exploit the ocean environment for tactical advantage. Research efforts are informed by activities conducted by Task Force Ocean, which involve academic researchers, industry partners, and the operational Navy.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue Passive Sonar work to further applied research to enhance passive sonar performance capability in the Arctic environment by developing a better passive sonar performance prediction model and new acoustic ice-characterization methods. - Continue Environmental Acoustics development of ensemble prediction products that exploit improved computational speeds for both underwater and atmospheric acoustics. - Continue efforts that will lead to in-situ estimation of environmental parameters; optimized sensing and behaviors by adapting in dynamic and uncertain environments; and capturing uncertainty in system performance prediction and tactical decision aids for ASW, MIW, and Seabed Warfare. - Continue development of parameterizations to predict the contribution from breaking waves to acoustic ambient noise, quantifying the increased accuracy vice using wind speed alone. - Continue development and advances to ambient noise characterization, source property and location estimation, expansion of varied data assimilation methodologies and improvements to metrics used for such capabilities in a variety of acoustic scenarios. - Continue efforts that will lead to in-situ estimation of environmental parameters; optimized sensing and behaviors by adapting in dynamic and uncertain environments; and capturing uncertainty in system performance prediction and tactical decision aids for ASW, MIW, and Seabed Warfare. - Continue efforts centered transferring knowledge, algorithms, and tools developed in the recently completed study of the Atlantis II region of the New England Seamounts to the ongoing data collection and modeling efforts in regions of the mid-Atlantic Ridge. The comparison of these two regions will also be used to test and validate Artificial Intelligence / Machine Learning (AI/ML) approaches to seabed and acoustic performance prediction based on statistically rigorous machine learning in regions where direct observations are unavailable. These tests and comparisons will include the Naval Research Lab (NRL) developed Global Predictive Seabed Model (GPSM). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Funding decrease from FY 2026 to FY 2027 is due reduced research in development and advances to ambient noise characterization, source property and location estimation, expansion of varied data assimilation methodologies and improvements to metrics used for such capabilities in a variety of acoustic scenarios and development of parameterizations to predict the contribution from breaking waves to acoustic ambient noise, quantifying the increased accuracy vice using wind speed alone.					
Title: Physical Oceanography ***Description:*** The Physical Oceanography activity develops knowledge of the physics of the ocean to enable tactical naval use and exploitation of the battlespace. This is achieved through the development of predictive models of the water mass structure, waves, currents, and air-sea interactions and developing measurement / observation technology. Other applications utilize knowledge of the interaction of the water column hydrodynamics and the acoustics to predict the undersea transmission characteristics and sources of uncertainty in these statistics. Utilizing knowledge of the ocean surface physics, the physical oceanography program seeks to exploit the combination of remotely sensed data, in-situ data, and adaptively sampled data to optimize predictions of ocean currents and water column structure. These predictions, custom databases, adaptive sampling schemes and data programs serve Surface Warfare, Anti-Submarine Warfare, Naval Special Warfare, and Mine and Expeditionary Warfare operations. Oceanographic field research that uses active acoustic transmissions requires modeling of the acoustic effects of sound on marine life in order to meet Navy environmental requirements. ***FY 2026 Plans:*** - Continue efforts into investigating new techniques and capabilities to improve our ability to handle large amounts of ocean data (including SWOT altimetry data) available in the near future for assimilation into analysis and forecast systems. This includes translating the data assimilation problem to wavelet space in order to accurately correct the model background while largely retaining the realistic fractal dynamics generated by the model physics and the sparsification of covariance matrices. - Continue to model/simulate ocean current variability, including the deep ocean boundary providing improved ocean environmental information for Seabed Warfare. Model / simulate high-resolution coupled wave-circulation-sediment transport on multiple timescales including storm event and seasonal timescales providing the capability to estimate environmental conditions in shallow water.	10.593	10.365	4.714	0.000	4.714

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue Sensors effort to conduct testing and integration of turbulence sensors and other ocean oceanographic sensors into unmanned platforms to expand ocean sampling capabilities. Continue development of autonomous sensors and platforms for use in the Arctic ocean environment. Continue field campaigns to study ocean processes and dynamics, ocean model development, and data assimilation from the open ocean to the nearshore environments. Continue to conduct studies to develop new or enhance existing shipboard, in-situ, airborne, and space borne sensors and appropriate inversion and through the sensor techniques to obtain physical oceanographic environmental data. - Continue Data Assimilation development to coupled modeling approaches including air-ice-wave- ocean-land models. - Continue Earth System Prediction Models development of the capability to utilize Earth System Prediction Models to forecast the global ocean using ensemble prediction methods to enable risk assessment with skill to 30 days. - Continue Ocean Battlespace efforts to develop a new capability for accurate and rapid characterization of the local ocean battlespace utilizing the ability of gliders to work in coordinated teams and 4-dimensional variation assimilation to maximize impact of the glider data in a high-resolution local forecast model for more accurate ocean predictions. - Continue Task Force Ocean research coordinated with Task Force Ocean including efforts to develop new and enhance existing shipboard, in-situ, airborne, and space-borne sensors, appropriate inversion methods, and through the sensor techniques to obtain physical oceanographic environmental data in conjunction with acoustical observations. ***FY 2027 Base Plans:*** - Continue efforts into investigating new techniques and capabilities to improve our ability to handle large amounts of ocean data (including SWOT altimetry data) available in the near future for assimilation into analysis and forecast systems. This includes translating the data assimilation problem to wavelet space in order to accurately correct the model background while largely retaining the realistic fractal dynamics generated by the model physics and the sparsification of covariance matrices.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to model/simulate ocean current variability, including the deep ocean boundary providing improved ocean environmental information for Seabed Warfare. Model / simulate high-resolution coupled wave-circulation-sediment transport on multiple timescales including storm event and seasonal timescales providing the capability to estimate environmental conditions in shallow water. - Continue Sensors effort to conduct testing and integration of turbulence sensors and other ocean oceanographic sensors into unmanned platforms to expand ocean sampling capabilities. Continue development of autonomous sensors and platforms for use in the Arctic ocean environment. Continue field campaigns to study ocean processes and dynamics, ocean model development, and data assimilation from the open ocean to the nearshore environments. Continue to conduct studies to develop new or enhance existing shipboard, in-situ, airborne, and space borne sensors and appropriate inversion and through the sensor techniques to obtain physical oceanographic environmental data. - Continue Data Assimilation development to coupled modeling approaches including air-ice-wave- ocean-land models. - Continue Earth System Prediction Models development of the capability to utilize Earth System Prediction Models to forecast the global ocean using ensemble prediction methods to enable risk assessment with skill to 30 days. - Continue Ocean Battlespace efforts to develop a new capability for accurate and rapid characterization of the local ocean battlespace utilizing the ability of gliders to work in coordinated teams and 4-dimensional variation assimilation to maximize impact of the glider data in a high-resolution local forecast model for more accurate ocean predictions. - Continue Task Force Ocean research coordinated with Task Force Ocean including efforts to develop new and enhance existing shipboard, in-situ, airborne, and space-borne sensors, appropriate inversion methods, and through the sensor techniques to obtain physical oceanographic environmental data in conjunction with acoustical observations. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 0000 / *Ocean Wrfghtg Env Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research in Earth System Prediction Models development and Data Assimilation development to coupled modeling approaches including air-ice-wave-ocean-land models.					
Accomplishments/Planned Programs Subtotals	78.018	81.270	64.693	0.000	64.693

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602435N / *Ocean Wrfghtg Env Applied Res*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	33.303	36.201	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	69.504

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: NSW Superiority ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop NSW Superiority	0.000	4.827
Congressional Add: Onboard Weather Forecasting for Afloat Naval Force ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research into Onboard Weather Forecasting for Afloat Naval Force	0.000	1.931
Congressional Add: Undersea Sensor Orchestration for Seafloor Mapping ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research into Undersea Sensor Orchestration for Seafloor Mapping	0.000	4.827
Congressional Add: Modeling Water-Ice Interactions ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research into Modeling Water-Ice Interactions	0.000	3.861
Congressional Add: Undersea Battlefield Sensing ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Conduct research into Undersea Battlefield Sensing	0.000	3.861
Congressional Add: Atmospheric River Research ***FY 2025 Accomplishments:*** The Navy will support applied S&T observing, modeling, and logistics coordination for field work in the Study of Air-sea Fluxes and Atmospheric River Intensity (SAFARI) Directed Research Initiative. SAFARI intends to increase the Navy's understanding of the physical processes associated with air-sea interaction and diabatic amplification (in which energy is transported through latent heating due to water	2.413	4.827

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
vapor transport) that perturb the waveguide along sloping mid-latitude fronts interacting with warm water vapor reservoirs in the tropics, which in turn leads to strong baroclinic development in maritime midlatitude storms and additionally can launch deep propagating Rossby and gravity waves into the stratosphere. This multi-agency, international effort will result in better understanding the role of ocean surface variability and vertical or slant-wise transport of moisture by focusing on upstream development in atmospheric river source regions to ultimately improve prediction lead-time of extreme precipitation. ***FY 2026 Plans:*** Continue Atmospheric River Research		
Congressional Add: Naval installation climate change risk management ***FY 2025 Accomplishments:*** Applied research on weather-related impacts on operations and installations along the eastern seaboard of the continental US, consistent with SECWAR guidance issued in Mar 17, 2025 memorandum addressing the Mission Focus of the DOW. ***FY 2026 Plans:*** N/A	2.413	0.000
Congressional Add: Pacific Infrastructure for continuous engineering ***FY 2025 Accomplishments:*** Conduct Pacific Infrastructure for continuous engineering ***FY 2026 Plans:*** N/A	14.480	0.000
Congressional Add: Ocean Acoustics for Monitoring ***FY 2025 Accomplishments:*** Applied research seeking to combine expertise in ocean acoustics, oceanography, biology/ecosystems and information processing, among other areas, to enhance the Navy's ability to exploit environmental knowledge for undersea warfare. A substantial portion of the research focus is centered on a multi-year study of the acoustic and oceanographic environment in the Gulf of Maine. The overall effort will incorporate efforts in education and training including opportunities for at-sea experimentation. Technical developments include exploitation of AI/ML for in situ environmental characterization from existing and novel submarine-based sensors and development of GPU based processing for advanced on-board signal processing. ***FY 2026 Plans:*** N/A	6.757	0.000
Congressional Add: intelligent autonomos systems for seabed warfare	7.240	12.067

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602435N / *Ocean Wrfghtg Env Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: Continue to conduct applied research in intelligent autonomous systems for seabed warfare. ***FY 2026 Plans:*** Continue to conduct applied research in intelligent autonomous systems for seabed warfare.		
Congressional Adds Subtotals	33.303	36.201

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602651M *I JT Non-Lethal Wpns Applied Res*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	7.487	7.300	4.105	-	4.105	3.774	4.138	4.539	4.614	Continuing	Continuing
0000: *JT Non-Lethal Wpns Applied Res*	0.000	7.487	7.300	4.105	-	4.105	3.774	4.138	4.539	4.614	Continuing	Continuing

A. Mission Description and Budget Item Justification

The DoW Non-Lethal Weapons (NLW) Program was established by the FY96 National Defense Authorization Act. The Office of the Secretary of War (OSW) designated the Commandant of the Marine Corps (CMC) as the DoW NLW Executive Agent (EA). The EA exercises centralized responsibility for joint research and development of nonlethal weapons and technology through the Joint Non-Lethal Weapons Program (JNLWP). The Office of the Under Secretary of War for Acquisition and Sustainment (A&S) serves as the OSW Principal Staff Assistant and oversees, in consultation with the Under Secretary of War for Policy and the DoW NLW Executive Agent.

The efforts described in this Program Element (PE) reflect science and technology (S&T) investment decisions by the Joint Non-Lethal Weapons Integrated Product Team, a multiservice flag level corporate board that provides executive oversight and management for the JNLWP for the CMC. This direction is based on the requirements and capabilities sought by the Services and the Coast Guard, as identified in the DoW's Non-Lethal Weapons Joint Capabilities Based Assessment Document. This coordinated joint S&T development approach addresses mutual capability gaps and assures the most relevant non-lethal technologies, capabilities and equipment are provided to the operating forces while eliminating duplicative service S&T investment. These applied research initiatives feed non-lethal capabilities which directly support the National Defense Strategy (NDS) objective of strategic competition by providing options to the joint force in pursuit of national objectives in legal or policy constrained scenarios, as well as complementing the use of lethal effects in complex combat scenarios, for example, in urban environments with large civilian populations. Ongoing NLW Intermediate Force Capability (IFC) studies, analyses and exercise efforts with NATO and Allies also support NDS objectives to strengthen alliances and partnerships. Resulting capabilities facilitate a fully integrated non-lethal competency as a complement to lethal firepower, providing force application options for below lethal threshold engagements.

This program funds the applied research, study, assessment, and demonstration of technologies that could provide a non-lethal capability or target effect. Investment areas include applied research related to: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter materiel missions; non-lethal acoustic and optical technologies; advanced non-lethal materials (including materials for vehicle/vessel stopping and counter-facility applications); associated human effects and effectiveness for new non-lethal stimuli; injury potential and effectiveness of directed energy, electro-muscular incapacitation, ocular, and acoustic based non-lethal technologies; and developing models of crowd behavior and dynamics.

This PE funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. The work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602651M *I JT Non-Lethal Wpns Applied Res*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	7.719	7.300	5.136	-	5.136
Current President's Budget	7.487	7.300	4.105	-	4.105
Total Adjustments	-0.232	0.000	-1.031	-	-1.031
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.232	0.000			
• Program Adjustments	0.000	0.000	-1.031	-	-1.031

Change Summary Explanation

Funding: The FY2027 budget was reduced by $1.031 million to meet higher priority Navy requirements.

Technical: No significant changes.

Schedule: No significant changes.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602651M / *JT Non-Lethal Wpns Appli ed Res*	Project (Number/Name) 0000 / *JT Non-Lethal Wpns Applied Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *JT Non-Lethal Wpns Applied Res*	0.000	7.487	7.300	4.105	-	4.105	3.774	4.138	4.539	4.614	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project funds the applied research, study, assessment, and demonstration of technologies that could provide a non-lethal capability or target effect. Investment areas include applied research related to: non-lethal directed energy weapons (lasers, millimeter wave and high power microwave) for counter-personnel and counter-materiel missions; non-lethal acoustic and optical technologies; advanced non-lethal materials (including materials for vehicle/vessel stopping and counter-facility applications); associated human effects and effectiveness for new non-lethal stimuli; injury potential and effectiveness of directed energy, electric stun, ocular, and acoustic based non-lethal technologies; and developing models of crowd behavior and dynamics.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: (U) Joint Non-Lethal Weapons	7.487	7.300	4.105	0.000	4.105
FY 2026 Plans: - Continue research and investigation of intermediate force effects and emergent technologies with the potential to further address Joint Requirements Oversight Council (JROC)-approved non-lethal counter-personnel and counter-material capability gaps. Results will support the transition of viable technologies to higher levels of development and demonstration to further mitigate the JROC-approved joint non-lethal effects capability-gaps. - Continue to explore new non-lethal effects and evaluate alternative innovative applications of existing technologies to address future non-lethal capability needs, for instance, as escalation of force platforms. - Continue to conduct counter-personnel research addressing further optimization of non-lethal human effects, and enhanced understanding of human target behavioral effects. - Continue to conduct applied research to characterize Non-Lethal Weapons (NLWs) and Intermediate Force Capability (IFC) phenomena, and to assess target human effects and weapon effectiveness, including the development of dose response and injury correlates for new NLW technologies. - Continue to assess and study new technologies related to NLW effectiveness and behavioral response, such as advancing the understanding of Flash Bang effects on humans to support novel non-explosive alternatives to pyrotechnic non-lethal devices.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602651M / *JT Non-Lethal Wpns Appli ed Res*	**Project (Number/Name)** 0000 / *JT Non-Lethal Wpns Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to conduct counter-materiel research to include the investigation of novel intermediate force capabilities for increased delivery and employment options for applications such as vehicle and vessel stopping, and the further optimization of intermediate force materials for integration into future platforms. - Continue to conduct feasibility and design studies for high peak power radio frequency directed energy sources and other high-power directed energy technologies (e.g., lasers, millimeter-waves) with extended range applications and longer duration of effect. - Continue conceptual design research and investigation of high-power microwave technologies to enable improved performance and reduce overall size, weight, power consumption, thermal cooling requirements, and overall system costs. - Continue research and investigation of novel NLW and IFC effects (such as novel dazzlers, flashbang, smoke, sting ball, and Directed Energy (DE) capabilities) to ultimately integrate onto future manned, unmanned, and autonomous weapons delivery platforms.					
FY 2027 Base Plans: - Continue research and investigation of intermediate force effects and emergent technologies with the potential to further address Joint Requirements Oversight Council (JROC)-approved non-lethal counter-personnel and counter-material capability gaps. Results will support the transition of viable technologies to higher levels of development and demonstration to further mitigate the JROC-approved joint non-lethal effects capability-gaps. - Continue to explore new non-lethal effects and evaluate alternative innovative applications of existing technologies to address future non-lethal capability needs, for instance, as escalation of force platforms. - Continue to conduct counter-personnel research addressing optimization of non-lethal human effects, and enhanced understanding of human target behavioral effects. - Continue to assess and study new technologies related to NLW effectiveness and behavioral response. - Continue to conduct counter-materiel research to include the investigation of novel intermediate force capabilities for increased delivery and employment options for applications such as vehicle and vessel stopping, and the further optimization of intermediate force materials for integration into future platforms.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602651M / *JT Non-Lethal Wpns Appli ed Res*	**Project (Number/Name)** 0000 / *JT Non-Lethal Wpns Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to conduct feasibility and design studies for high peak power radio frequency directed energy sources and other high-power directed energy technologies (e.g., lasers, millimeter-waves) with extended range applications and longer duration of effect. - Continue conceptual design research and investigation of high-power microwave technologies to enable improved performance and reduce overall size, weight, power consumption, and overall system costs. - Continue research and investigation of novel NLW and IFC effects to ultimately integrate onto future manned, unmanned, and autonomous weapons delivery platforms. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease of $3.195M from FY26 to FY27 reflects a realignment of resources to address Department of the Navy (DON) priorities.					
Accomplishments/Planned Programs Subtotals	7.487	7.300	4.105	0.000	4.105

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0603851M/2319: *Non-Lethal Weapons*	29.360	9.832	14.152	-	14.152	11.394	10.464	10.038	10.296	Continuing	Continuing
• RDTEN/0603651M/3022: *Joint Non-Lethal Weapons Applied Research*	15.702	6.561	8.727	-	8.727	8.261	9.005	8.560	8.703	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602747N *I Undersea Warfare Applied Res*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	90.135	120.808	52.515	-	52.515	57.348	58.237	56.976	58.240	Continuing	Continuing
0000: *Undersea Warfare Applied Res*	0.000	60.210	64.335	52.515	-	52.515	57.348	58.237	56.976	58.240	Continuing	Continuing
9999: *Congressional Adds*	0.000	29.925	56.473	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	86.398

A. Mission Description and Budget Item Justification

The Undersea Warfare Applied Research Program Element (PE) funds applied research efforts in undersea target detection, classification, localization, tracking, and neutralization. Associated efforts focus on new Anti-Submarine Warfare (ASW) operational concepts that promise to improve wide-area surveillance, detection, localization, tracking, and attack capabilities against quiet adversary submarines operating in noisy and cluttered shallow water environments. Related efforts are aimed at leveraging technologies that will protect the country's current capital investment in surveillance, submarine, surface ship, and air ASW assets. Research focused on understanding the impacts on marine species of manmade underwater sound is also conducted in the PE.

The activities described in this PE address future Navy and Marine Corps capabilities needed to maintain maritime superiority and ensure national security. Targeted capabilities are based on input from Naval Research Enterprise stakeholders including combatant commands, Office of the Chief of Naval Operations (OPNAV) and Headquarters Marine Corps and are designed to exploit breakthroughs in science and technology in order to deliver maximum undersea warfighting benefit to our sailors and marines.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This PE funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602747N *I Undersea Warfare Applied Res*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	88.525	64.335	66.576	-	66.576
Current President's Budget	90.135	120.808	52.515	-	52.515
Total Adjustments	1.610	56.473	-14.061	-	-14.061
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.027			
• Congressional Rescissions	-	-			
• Congressional Adds	-	58.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	3.994	0.000			
• SBIR/STTR Transfer	-2.383	0.000			
• Program Adjustments	0.000	0.000	-14.061	-	-14.061
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Acoustic Sources, Senors, and Systems*	0.000	9.653
Congressional Add: *SAPF/SCIF University Facility Upgrades*	0.000	9.654
Congressional Add: *Resident Autonomous Undersea Robotics*	0.000	9.654
Congressional Add: *Strategic Soundscapes for ocean awareness*	8.205	8.205
Congressional Add: *Undersea autonomy research facilities capability*	2.413	0.000
Congressional Add: *Partnerships for submarine and undersea vehicle programs*	19.307	19.307
Congressional Add Subtotals for Project: 9999	29.925	56.473
Congressional Add Totals for all Projects	29.925	56.473

Change Summary Explanation

Funding: FY27 decrease of $14.061 due to Applied Research Reductions to meet higher departmental requirements.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602747N / *Undersea Warfare Applied Res*	Project (Number/Name) 0000 / *Undersea Warfare Applied Res*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Undersea Warfare Applied Res*	0.000	60.210	64.335	52.515	-	52.515	57.348	58.237	56.976	58.240	Continuing	Continuing

A. Mission Description and Budget Item Justification

This PE funds applied research efforts in undersea target detection, classification, localization, tracking, and neutralization. Associated efforts focus on new Anti-Submarine Warfare (ASW) operational concepts that promise to improve wide-area surveillance, detection, localization, tracking, and attack capabilities against quiet adversary submarines operating in noisy and cluttered shallow water environments. Related efforts are aimed at leveraging technologies that will protect the country's current capital investment in surveillance, submarine, surface ship, and air ASW assets.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Anti-Submarine Warfare (ASW) Distributed Search	11.767	23.488	18.816	0.000	18.816
Description: Anti-Submarine Warfare (ASW) Distributed Search focuses on the development of technologies for the tactical search for undersea targets ranging from hours to weeks, using automated sensor systems deployed around operating areas, including along key transit routes to protect naval/maritime forces, around temporarily fixed sea base regions and naval force operating areas, or around fixed defensive regions and areas of interest, such as key US/Allied ports. "Search" is conducted in concentrated areas, typically exploiting cues received from surveillance systems. The objective is to develop rapidly deployable systems employing automated detection and classification capabilities for use in both shallow and deep water operating environments. Related efforts include the development of distributed systems; Unmanned Undersea Vehicle-based and affordable off-board deployable sensing systems employing persistent detection concepts and components; and active acoustic sensing and processing techniques, navy-unique transduction and underwater networking technologies. These efforts provide an extended reach of organic platform-based systems through the use of new sensor concepts, improved materials for advanced sensors, optimized deployment, employment, and automated operation of distributed sensor fields.					
FY 2026 Plans: -Continue Active Sonar development of advanced signal and information processing for high duty cycle active sonar. Further development of concepts for next-generation active sonar system automation, leveraging the latest advances in machine learning and artificial intelligence. - Continue non-acoustic, orthogonal concepts that complement and augment active sonar concepts.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue Sensors applied research in improved sensor technology to include both passive and active acoustic and optical sensing to extend the capabilities of platform-based systems as well as innovative sensor technology for off-board and rapidly deployable systems. -Continue Signal Processing development of advanced signal and information processing for high duty cycle active sonar. -Continue development of technologies and techniques for exploiting structural acoustic vulnerabilities of adversary undersea platforms conducting an at sea trial. -Continue efforts that will lead to optimized sensing and behaviors by adapting in dynamic and uncertain environments; cooperative vehicle autonomy with increased endurance; data exfiltration and networking to expand reach; next generation sensors (acoustic and non-acoustic); adaptive, autonomous technologies to detect, classify, and track underwater mobile threats. -Continue development of technologies and signal processing, verified through sea trials that exploit the structural acoustics of undersea vehicles and structures.					
FY 2027 Base Plans: -Continue Active Sonar development of advanced signal and information processing for high duty cycle active sonar. Further development of concepts for next-generation active sonar system automation, leveraging the latest advances in machine learning and artificial intelligence. -Continue non-acoustic, orthogonal concepts that complement and augment active sonar concepts. -Continue Sensors applied research in improved sensor technology to include both passive and active acoustic and optical sensing to extend the capabilities of platform-based systems as well as innovative sensor technology for off-board and rapidly deployable systems. -Continue Signal Processing development of advanced signal and information processing for high duty cycle active sonar.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue development of technologies and techniques for exploiting structural acoustic vulnerabilities of adversary undersea platforms conducting an at sea trial. -Continue efforts that will lead to optimized sensing and behaviors by adapting in dynamic and uncertain environments; cooperative vehicle autonomy with increased endurance; data exfiltration and networking to expand reach; next generation sensors (acoustic and non-acoustic); adaptive, autonomous technologies to detect, classify, and track underwater mobile threats. -Continue development of technologies and signal processing, verified through sea trials that exploit the structural acoustics of undersea vehicles and structures. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease in funding from FY2026 to FY2027 is due to decreased research efforts across multiple areas including active sonar development, sensor applied research, and signal processing development.					
Title: Anti-Submarine Warfare (ASW) Precision Localization	3.718	3.556	2.941	0.000	2.941
Description: ASW Precision Localization focuses on the development and demonstration of technologies which use information from surveillance or search systems to determine an Area Of Uncertainty (AOU) relative to target range, bearing, and depth adequate to handoff to an attack system. Precision Localization employs non-acoustic techniques such as magnetic and optical sensing to localize submerged threats. The objective is to increase magnetic sensor range and robustness, enable deployment on Unmanned Air Vehicles (UAVs), and increase optical sensing search rates. Efforts include the development of non-traditional tracking and advanced magnetic and electric field sensors and processing. These technologies will provide a decreased AOU size thus enabling the effective use of smaller, more versatile torpedoes as well as increased performance gain in detection, targeting, tracking/trailing, and homing via target acquisition and covert prosecution. ***FY 2026 Plans:*** -Continue Precision Localization research on advanced sensing modalities and sampling approaches. Investigate alternative emethods for Precision Localization leveraging magnetic and electric field sensing technologies and incorporating alternative technologies and approaches.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue sensors research into novel methods to develop smaller and power efficient, high performance magnetic, electric field, acoustic, and novel sensors. Continue research on advanced concepts for processing arrays of independent sensors to create adaptive information theoretic sensor systems. Continue applied research into information theoretic optical sampling and telemetry characteristics to better support sensor performance and data integrity; improve the effectiveness of photonic sensor operations across the air-water interface; and extend the distance optical sensors can effectively operate within the water column. -Continue Remote and Optical Sensing research into remote methods of sensing target signatures. Continue research on optical sensing for precision localization and to better exploit the information capacity available in photonic systems to increase sensor performance. ***FY 2027 Base Plans:*** -Continue Precision Localization research on advanced sensing modalities and sampling approaches. Investigate alternative emethods for Precision Localization leveraging magnetic and electric field sensing technologies and incorporating alternative technologies and approaches. -Continue sensors research into novel methods to develop smaller and power efficient, high performance magnetic, electric field, acoustic, and novel sensors. Continue research on advanced concepts for processing arrays of independent sensors to create adaptive information theoretic sensor systems. Continue applied research into information theoretic optical sampling and telemetry characteristics to better support sensor performance and data integrity; improve the effectiveness of photonic sensor operations across the air-water interface; and extend the distance optical sensors can effectively operate within the water column. -Continue Remote and Optical Sensing research into remote methods of sensing target signatures. Continue research on optical sensing for precision localization and to better exploit the information capacity available in photonic systems to increase sensor performance. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant change between FY 2026 and FY2027 funding.					
Title: Anti-Submarine Warfare (ASW) Surveillance	27.730	21.037	18.757	0.000	18.757

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: ASW Surveillance focuses on improving detection, classification, and localization capabilities in large ocean areas relative to the capabilities of existing ASW surveillance systems. The related technologies support the conduct of covert, wide-area surveillance ranging from one day to six months. The objectives are to develop and demonstrate technologies that provide clandestine indications and warnings in far forward and contested operating areas, and in complex operational environments against all submarine threats, including new threats with unknown target signatures and tactics. Covertness implies use of non-observable platforms and/or deployed automated sensors employing passive sonar, or other non-detectable methods. The surveillance process includes initial detection and classification. Efforts include the development of Unmanned Undersea Vehicle-based and affordable, off-board deployable sensing systems employing a wide variety of surveillance concepts and components. These efforts focus on alternative detection phenomena, vector/tensor sensors, automated acoustic processing, more compact and longer lasting power sources, and high bandwidth, acoustic communications links.					
FY 2026 Plans: -Continue Sonar signal processing related research to develop artificial intelligence technology providing optimized sonar system line-ups that adjust themselves in real time to the current undersea environment. -Continue Sonar exploitation of the information content of ambient noise, creating novel tactical detection methods that exploit ambient noise information content and conducting at sea measurements to validate. -Continue Sonar development and assessment of signal approaches for low complexity sonars, focusing on passive analysis and the generation of actionable warnings. Validate single processing approaches using at sea data. -Continue Sensor studies to improve performance of acoustic vector sensors, vector magnetometers, electrochemical sensors and three-axis magnetometers. -Continue Sensors development of automation approaches that will modernize undersea passive acoustic detection and classification techniques conducting a major at sea trial to collect data for algorithm training and assessment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue Underwater Vehicle Propulsion development of approaches for fluid-loaded elastic structures and soft-bodied unmanned underwater vehicle propulsion. -Continue Underwater Vehicle Propulsion development of technologies for a solar sea glider focused on develop a wavelength tailored photovoltaic cell with selectable layers for use at surface and sub-surface conditions and begin to look at mitigation approaches to bio-fouling. -Continue Signal Processing investigating applicable non-acoustic methods of detection and classification of ultra-quiet, low-Doppler submarines in complex operating environments. Continue applied research to exploit recent advances in basic/theoretical computer science to efficiently implement signal processing and artificial-intelligence algorithms using mathematical approaches including randomized methods. -Continue efforts that will lead to optimized sensing and behaviors by adapting in dynamic and uncertain environments; cooperative vehicle autonomy with increased endurance; data exfiltration and networking to expand reach; next generation sensors (acoustic and non-acoustic); adaptive, autonomous technologies to detect, classify, and track underwater mobile threats; and new processing techniques which increase performance and expand the tactical utility of current systems.					
FY 2027 Base Plans: -Continue Sonar signal processing related research to develop artificial intelligence technology providing optimized sonar system line-ups that adjust themselves in real time to the current undersea environment. -Continue Sonar exploitation of the information content of ambient noise, creating novel tactical detection methods that exploit ambient noise information content and conducting at sea measurements to validate. -Continue Sonar development and assessment of signal approaches for low complexity sonars, focusing on passive analysis and the generation of actionable warnings. Validate single processing approaches using at sea data. -Continue Sensor studies to improve performance of acoustic vector sensors, vector magnetometers, electrochemical sensors and three-axis magnetometers.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue Sensors development of automation approaches that will modernize undersea passive acoustic detection and classification techniques conducting a major at sea trial to collect data for algorithm training and assessment. -Continue Underwater Vehicle Propulsion development of approaches for fluid-loaded elastic structures and soft-bodied unmanned underwater vehicle propulsion. -Continue Underwater Vehicle Propulsion development of technologies for a solar sea glider focused on develop a wavelength tailored photovoltaic cell with selectable layers for use at surface and sub-surface conditions and begin to look at mitigation approaches to bio-fouling. -Continue Signal Processing investigating applicable non-acoustic methods of detection and classification of ultra-quiet, low-Doppler submarines in complex operating environments. Continue applied research to exploit recent advances in basic/theoretical computer science to efficiently implement signal processing and artificial-intelligence algorithms using mathematical approaches including randomized methods. -Continue efforts that will lead to optimized sensing and behaviors by adapting in dynamic and uncertain environments; cooperative vehicle autonomy with increased endurance; data exfiltration and networking to expand reach; next generation sensors (acoustic and non-acoustic); adaptive, autonomous technologies to detect, classify, and track underwater mobile threats; and new processing techniques which increase performance and expand the tactical utility of current systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease in funding from FY2026 to FY2027 is due to decreased research across multiple areas including Sonar development, sonar exploitation, sonar signal processing, and vehicle propulsion.					
Title: Marine Biology ***Description:*** The Marine Biology (MB) program, formerly titled the Marine Mammals and Biology (MMB) Program in FY26 and prior, aims to provide a warfighting advantage across three key areas: 1) tactically and 2) operationally within the ocean battlespace through enhanced understanding of marine species distribution and abundance, and 3) strategically, by preserving Navy readiness and ensuring compliance with legal requirements	2.640	2.527	1.113	0.000	1.113

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
during at-sea training and testing. The program supports basic and applied research and technology development to improve maritime domain awareness of marine species, enabling better characterization and prediction of their effects on naval systems (e.g., sonar performance). Improved domain awareness and Navy readiness at a large scale will ensure the U.S. Navy's at-sea testing and training requirements are informed by accurate, up-to-date, and comprehensive scientific data of the baseline conditions in which they operate. Furthermore, the MB program investigates the impacts of naval activities on marine species at the behavioral, physiological, ecological, and population levels ***FY 2026 Plans:*** -Continue efforts of applied research in areas including monitoring and detection, integrated ecosystem, and effects of Anti- Submarine Warfare (ASW) sonar on marine mammals. -Continue Passive Acoustic Monitoring research efforts on passive acoustics and other technology supporting wide area surveillance, including the development and testing of new autonomous hardware platforms and signal processing algorithms for detection, classification, and localization of marine mammals. -Continue research using animal tagging and passive acoustic monitoring to quantify behaviors, movement, and distribution of marine mammals relative to key environmental properties and sonar exposure, both incidental and experimental. -Continue Sonar Exposure research to quantify the behavioral and physiological effects to potentially population-level consequences of sonar exposure on marine life to develop risk criteria for Navy's sound effects modeling, as well as develop quantitative inputs for modeling biologically significant effects on marine mammal populations. Navy sound effects modeling is used in Environmental Impact Statements, and subsequent Letters of Authorization issued by the NOAA regulator that enable all Navy Anti- Submarine Warfare (ASW) exercises and testing. -Continue further research efforts to design equipment and capability to quantify the physiological requirements, such as gas management and kinetics, in marine mammals to evaluate the mechanisms that enable marine mammals to dive to deep.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue research to advance our understanding of sound reception mechanisms in large whales including the anatomy surrounding the ear and the whole head to improve and validate finite element models of sound propagation through various tissues. -Continue Marine Mammal Behavior research into the stress response of marine mammals to ASW sonar exposure with an emphasis on quantifying the effects of prolonged exposure on immune system suppression, reproductive failure, accelerated aging, and slowed growth. -Continue to conduct research on potential effects of Navy ASW sonar sources on marine mammal behavior, life functions, vital rates, and population level effects. The goal is to understand and quantify the effects of naval activities on species or stocks of marine mammals, including effects on annual rates of recruitment and survival. -Continue Environmental Compliance research to provide tools to support environmental compliance efforts and decision making related to how marine mammals can be affected by anthropogenic sounds.					
FY 2027 Base Plans: -Continue efforts of applied research in areas including monitoring and detection, integrated ecosystem, and effects of Anti- Submarine Warfare (ASW) sonar on marine species -Continue Passive Acoustic Monitoring research efforts on passive acoustics and other technology supporting wide area surveillance, including the development and testing of new autonomous hardware platforms and signal processing algorithms for detection, classification, and localization of marine species. -Continue research to advance our understanding of sound reception mechanisms in large whales including the anatomy surrounding the ear and the whole head to improve and validate finite element models of sound propagation through various tissues. -Continue research using animal tagging and passive acoustic monitoring to quantify behaviors, movement, and distribution of marine species relative to key environmental properties and sonar exposure, both incidental and experimental. -Continue Sonar Exposure research to quantify the behavioral and physiological effects to potentially population-level consequences of sonar exposure on marine life to develop risk criteria for Navy's sound effects modeling,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
as well as develop quantitative inputs for modeling biologically significant effects on marine species populations. Navy sound effects modeling is used in Environmental Impact Statements, and subsequent Letters of Authorization issued by the NOAA regulator that enable all Navy Anti- Submarine Warfare (ASW) exercises and testing. -Continue further research efforts to design equipment and capability to quantify the physiological requirements, such as gas management and kinetics, in marine species to evaluate the mechanisms that enable marine species to dive too deep. -Continue marine species behavior research into the stress response of marine species to ASW sonar exposure with an emphasis on quantifying the effects of prolonged exposure on immune system suppression, reproductive failure, accelerated aging, and slowed growth. -Continue to conduct research on potential effects of Navy ASW sonar sources on marine species behavior, life functions, vital rates, and population level effects. The goal is to understand and quantify the effects of naval activities on species or stocks of marine species, including effects on annual rates of recruitment and survival. -Continue Environmental Compliance research to provide tools to support environmental compliance efforts and decision making related to how marine species can be affected by anthropogenic sounds. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease in funding from FY2026 to FY2027 is due to decreased research efforts across multiple areas including passive acoustics monitoring, sonar exposure research, and marine species behavior.					
Title: Undersea Weaponry ***Description:*** Undersea Weaponry focuses on the development of technologies for current and next-generation, offensive and defensive weapons capable of engaging submarines, surface ships and threat torpedoes. Specific efforts focus on increasing probability of kill and probability of counter-kill by improving sensor performance, engagement tactics, vehicle propulsion and warhead lethality. New weapon and delivery concepts are being assessed.	14.355	13.727	10.888	0.000	10.888

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Detailed information regarding Undersea Weaponry Applied Research program plans and objectives is at a higher classification. ***FY 2026 Plans:*** - Continue applied research related to critical Science and Technology (S&T) for Rapid-Reaction Undersea Weapons and Counter-Measures, High-Speed Vehicle Technology, Undersea Warheads Technology, RPG-of-the-Sea and Air-Independent Power and Energy. - Continue applied research to explore additional transition opportunities for technologies developed under the High-Speed Vehicle Technology. - Continue expanding efforts associated with sensing and warhead testing. - Complete related field activities under the Torpedo Field/Lab Experimentation Program. - Initiate basic and applied research in directed energy for undersea applications, and undersea effects for deep sea and seabed warfare. - Initiate sensing, target updating, and propulsion technologies for long endurance weapons. - Initiate applied research in coordinated networks of weapons and sensors and new weapons concepts. ***FY 2027 Base Plans:*** - Continue applied research related to critical Science and Technology (S&T) for Rapid-Reaction Undersea Weapons and Counter-Measures, High-Speed Vehicle Technology, Undersea Warheads Technology, RPG-of-the-Sea and Air-Independent Power and Energy. - Continue applied research to explore additional transition opportunities for technologies developed under the High-Speed Vehicle Technology. - Continue expanding efforts associated with sensing and warhead testing. - Continue basic and applied research in directed energy for undersea applications, and undersea effects for deep sea and seabed warfare. - Continue sensing, target updating, and propulsion technologies for long endurance weapons. - Continue applied research in coordinated networks of weapons and sensors and new weapons concepts. -Initiate applied science for seabed warfare technologies. - Initiate investigation of free-space and fiber contained optical transport solutions and associated technology developments - Initiate measurement and model propagation in highly dynamic environment to enable performance prediction in support of validation of atmospheric prediction models - Initiate investigation of novel window materials and anti-reflection approaches and environmental impacts					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 0000 / *Undersea Warfare Applied Res*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate exploration of novel enclosure materials to meet performance while addressing environmental and operational exposure ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY2026 to FY2027 is due to reduced development across multiple Undersea Weaponry projects, including applied science for seabed warfare technologies.					
Accomplishments/Planned Programs Subtotals	60.210	64.335	52.515	0.000	52.515

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602747N / *Undersea Warfare Applied Res*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	29.925	56.473	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	86.398

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Acoustic Sources, Senors, and Systems ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Acoustic Sources, Sensors, and Systems	0.000	9.653
Congressional Add: SAPF/SCIF University Facility Upgrades ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop SAPF/SCIF University Facility Upgrades	0.000	9.654
Congressional Add: Resident Autonomous Undersea Robotics ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Resident Autonomous Undersea Robotics	0.000	9.654
Congressional Add: Strategic Soundscapes for ocean awareness ***FY 2025 Accomplishments:*** Develop Strategic Soundscapes for ocean awareness This effort seeks to develop tools to measure and exploit the acoustic background in a given ocean region based on a temporal and spatial understanding of that soundscape and includes developing an understanding of the interplay between oceanographic conditions and the soundscape and then using that understanding to inform decision making. AI/ML and optimization models that can predict or define autonomous behaviors or platform actions within a mission will be developed. ***FY 2026 Plans:*** Continue to Develop Strategic Soundscapes for ocean awareness This effort seeks to develop tools to measure and exploit the acoustic background in a given ocean region based on a temporal and spatial understanding of that soundscape and includes developing an understanding of the interplay between oceanographic conditions and the soundscape and then using that understanding to inform	8.205	8.205

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602747N / *Undersea Warfare Applied Res*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
decision making. AI/ML and optimization models that can predict or define autonomous behaviors or platform actions within a mission will be developed.		
Congressional Add: Undersea autonomy research facilities capability ***FY 2025 Accomplishments:*** Develop Undersea autonomy research facilities capability ***FY 2026 Plans:*** N/A	2.413	0.000
Congressional Add: Partnerships for submarine and undersea vehicle programs ***FY 2025 Accomplishments:*** Conduct research for partnerships submarine and undersea vehicle programs by accelerating the advancement of undersea technology important to national defense and economic development. ***FY 2026 Plans:*** Continue to Conduct research for partnerships submarine and undersea vehicle programs by accelerating the advancement of undersea technology important to national defense and economic development.	19.307	19.307
Congressional Adds Subtotals	29.925	56.473

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602750N *I Future Naval Capabilities Applied Research*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	162.804	308.776	305.357	-	305.357	261.540	261.224	277.484	278.360	Continuing	Continuing
0000: *Future Naval Capabilities Applied Research*	0.000	5.736	3.128	2.916	-	2.916	13.941	30.076	76.756	93.210	Continuing	Continuing
1385: *Aerospace Sciences*	0.000	6.416	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.416
1386: *Biomedical*	0.000	2.061	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.061
1388: *Directed Energy*	0.000	6.149	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.149
1389: *Electromagnetic Spectrum*	0.000	28.288	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.288
1391: *Full Spectrum Cyber*	0.000	13.264	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.264
1392: *Human Systems*	0.000	16.607	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.607
1393: *Kinetic Weapons*	0.000	10.831	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.831
1394: *Manufacturing*	0.000	2.013	6.816	7.815	-	7.815	7.760	7.376	7.528	7.658	Continuing	Continuing
1395: *Materials*	0.000	2.470	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.470
1396: *Naval Engineering*	0.000	19.276	12.020	24.468	-	24.468	15.547	14.901	15.089	15.354	Continuing	Continuing
1399: *Ocean Battle Space Applications*	0.000	30.481	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.481
1400: *Power and Energy*	0.000	5.222	4.544	5.210	-	5.210	5.174	4.917	5.018	5.104	Continuing	Continuing
1401: *Undersea Systems Payloads and Weapons*	0.000	3.130	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.130
1502: *C5ISR/Naval Space*	0.000	0.000	104.837	80.782	-	80.782	60.799	62.010	53.363	46.699	Continuing	Continuing
1503: *Directed Energy & Kinetic Systems*	0.000	0.000	33.682	31.501	-	31.501	24.663	24.754	25.264	25.696	Continuing	Continuing
1505: *Human & Biological Systems*	0.000	0.000	19.598	19.420	-	19.420	17.380	17.215	17.570	17.872	Continuing	Continuing
1506: *Materials/Electronics*	0.000	0.000	1.514	1.737	-	1.737	1.726	1.640	1.673	1.702	Continuing	Continuing
1507: *Naval Aerospace*	0.000	0.000	22.575	42.155	-	42.155	35.538	23.394	14.541	7.998	Continuing	Continuing
1508: *Undersea Systems*	0.000	0.000	66.338	66.120	-	66.120	56.529	50.418	35.665	36.276	Continuing	Continuing
1510: *Expeditionary Campaign*	0.000	0.000	0.000	18.531	-	18.531	17.754	19.901	20.312	16.005	Continuing	Continuing

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602750N *I Future Naval Capabilities Applied Research*							
5891: *Naval S&T Ops Analysis, Supp & Experimentation Act*	0.000	0.000	4.763	4.702	-	4.702	4.729	4.622	4.705	4.786	Continuing	Continuing
5893: *Decision Superiority*	0.000	10.860	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.860
9999: *Congressional Adds*	0.000	0.000	28.961	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.961

Note

Innovative Naval Prototypes (INP) Applied Research (6.2) PE 0602792N has been consolidated into the Future Naval Capabilities Applied Research (6.2) PE 0602750N beginning in FY2026 in alignment with the DoW Implementation Plan from the Commission on PPBE Interim Report for PE/BLI Consolidation.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) works across the Department of the Navy (DON) and Naval Research Enterprise (NRE) to develop warfighting capabilities that address operational force's highest priorities. While leveraging technology innovation is critical to maintaining a decisive edge, maintaining a pipeline of new capabilities requires balancing flexibility and risk, in order to deliver solutions to known requirements, and experiment with potential game-changing ideas informed by higher DoN and DoW guidance. This PE funds applied research for Future Naval Capabilities (FNC) Technology Candidates (TC) and Innovative Naval Prototypes (INP). This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between TRL 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

TCs are at lower Technology Readiness Level (TRLs) and focus on maturing technologies to higher TRLs to reduce FNC transition risk. The FNC Program favors a high level of collaboration. PE projects and R-2A planned programs are mostly organized by the Office of Naval Research (ONR) Science and Technology research focus areas. ONR Departments are tasked to collaborate with the acquisition stakeholders and their resource sponsors.

INP are larger in scope, scale, and risk. They are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs typically have long durations. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require both the Applied Research, detailed in this PE; and Advanced Technology Development (ATD) funding, detailed in PE 0603673N. Developing INPs requires a systematic expansion and application of knowledge to develop useful materials, devices, and systems oriented toward the design and development of prototypes applicable to specific mission area requirements.

The efforts funded within this PE translate promising basic and applied research into solutions for broadly defined military needs. Applied Research INPs and TCs do not develop hardware for service use; rather they provide feeder technology that can transition to Higher level TRL INPs, FNCs or via an alternate transition path.

Information security concerns preclude full disclosure of project efforts, research activities, and technology development plans within this exhibit. Detailed information will be provided to the Congressional oversight committees.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602750N *I Future Naval Capabilities Applied Research*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	163.673	279.815	287.954	-	287.954
Current President's Budget	162.804	308.776	305.357	-	305.357
Total Adjustments	-0.869	28.961	17.403	-	17.403
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-1.039			
• Congressional Rescissions	-	-			
• Congressional Adds	-	30.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.631	0.000			
• SBIR/STTR Transfer	-3.500	0.000			
• Program Adjustments	0.000	0.000	17.403	-	17.403
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Quantum Communications Corridor*	0.000	9.654
Congressional Add: *ATRT enterprise*	0.000	19.307
Congressional Add Subtotals for Project: 9999	0.000	28.961
Congressional Add Totals for all Projects	0.000	28.961

Change Summary Explanation

Funding: The FY 2027 budget request increased by $17.4 million due to the realignment of funds in support of FY27 INP/FNC selections and an increase to the Naval Engineering Project to support activities aligned with Golden Fleet.

Technical: PU 1510: Expeditionary Campaign- was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. This is not a new start.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 0000 / *Future Naval Capabilities Applied Research*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Future Naval Capabilities Applied Research*	0.000	5.736	3.128	2.916	-	2.916	13.941	30.076	76.756	93.210	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Project funds applied research for Future Naval Capabilities (FNC) Technology Candidates (TC) supporting Warfighter Protection and also contains the estimated Applied Research funding for Innovative Naval Prototypes (INP) yet to be selected. Most of the work in this PE can be characterized between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Warfighter Protection TCs focus on maturing technologies that enhance Naval warfighting effectiveness and efficiency within the Manpower, Personnel, Training and Education to a point where they can be proposed and continued as Future Naval Capabilities (FNC) in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

INPs are larger in scope, scale, and risk. They are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs typically have long durations with no more than three years between decision points. INPs require both the Applied Research, detailed within the Projects of this PE; and Advanced Technology Development (ATD) funding, detailed in PE 0603673N Project 2966 S&T Campaigns. After new INPs are selected, the Applied Research funding within this Project gets moved into other Projects within this PE. There are specific R2As within these projects for each INP, so they are uniquely identified.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: FNC Program Management Support ***Description:*** In FY25, this Activity funded the support, analysis, and technology management of all FNC Program investments. In FY26, as part of the restructuring effort for this PE, these funds were moved to the FNC Program Management Support Activity of Project 5891 Naval S&T Ops Analysis, Supp & Experimentation Act. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.738	0.000	0.000	0.000	0.000
Title: Warfighter Performance	2.998	3.128	2.916	0.000	2.916

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 0000 / *Future Naval Capabilities Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The objective of this activity is to conduct research and mature technologies that enhance Naval warfighting effectiveness and efficiency within the Manpower, Personnel, Training and Education to a point where they can be proposed and continued as Future Naval Capabilities (FNC) in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development. ***FY 2026 Plans:*** - Initiate and complete applied research on the validation and verification of manpower assessment tools for robotics rating. - Complete development of training methodologies that teach individuals generalized skills in response to an emerging suite of autonomous and semi-autonomous systems. - Continue novel applied research in support of emerging Naval and Marine Corps Requirements, to include optimization of individual and team performance using manpower, personnel, and training approaches. ***FY 2027 Base Plans:*** - Continue novel applied research in support of emerging Naval Requirements to include optimization of individual and team performance using manpower, personnel, and training approaches. - Initiate data integration processes for mitigating counterproductive work behavior (e.g., burn-out, mental health, assault, suicide). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease due to completion of training methodologies in response to autonomous and semi-autonomous systems.					
Accomplishments/Planned Programs Subtotals	5.736	3.128	2.916	0.000	2.916

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 0000 / *Future Naval Capabilities Applied Research*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1385 / *Aerospace Sciences*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1385: *Aerospace Sciences*	0.000	6.416	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.416

Note

Investments in Project 1385 Aerospace Sciences are now funded in this same PE 0602750N under Project 1507 Naval Aerospace.

A. Mission Description and Budget Item Justification

The Aerospace Sciences activity develops technologies for the science and engineering of flight from the land and sea surfaces to the edge of the atmosphere, and as applicable to the utilization of flight for aircraft, missiles, rockets, munitions, and unmanned systems (UxS) employed by the Navy and Marine Corps forces operating from naval platforms or land locations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Air Platforms ***Description:*** Investigate and mature technologies in support of delivering capabilities or improvements to aviation platforms (manned/unmanned) and air-ship operations; and developing other technologies specific to the air domain or aviation regime. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	6.416	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	6.416	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*				Project (Number/Name) 1386 / *Biomedical*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1386: *Biomedical*	0.000	2.061	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.061

Note

Investments in Project 1386 Biomedical are now funded in this same PE 0602750N under Project 1505 Human & Biological Systems.

A. Mission Description and Budget Item Justification

The objective of this project is to conduct biomedical research and mature technologies that enhance the health, survivability, and recovery of Sailors and Marines operating in austere, distributed, and isolated maritime environments by enabling naval forces to bring biomedical capacity forward, create it on-demand, support prolonged field care, enable casualty evacuation, and provide en route care. Projects translate basic and applied science to meet a specific Naval need and if successful, will continue to advance in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Human Performance and Medical Support	2.061	0.000	0.000	0.000	0.000
Description: The Human Performance and Medical Support research area applies new knowledge gained from the basic and applied science biomedical research portfolio to address Navy specific needs, such as protecting warfighters from operational health threats including medical challenges associated with hypothermal and hyperbaric exposure, developing diagnostic and treatment capabilities for use in operational environments, and prototyping new capabilities to recover injured warfighters. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	2.061	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1386 / *Biomedical*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*				Project (Number/Name) 1388 / *Directed Energy*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1388: *Directed Energy*	0.000	6.149	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.149

Note

Investments in Project 1388 Directed Energy are now funded in this same PE 0602750N under Project 1503 Directed Energy & Kinetic Systems.

A. Mission Description and Budget Item Justification

The Directed Energy (DE) activity develops technologies that enable laser and high-power microwave (HPM) weapon systems, within Navy and Marine Corps size, weight, and power (SWAP) constraints, to strike enemy targets and to defend naval platforms and land bases from threats. Additionally, the DE activity develops technologies that enable defense against adversary DE systems.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Directed Energy ***Description:*** Investigate and mature technologies related to High Power Microwave (HPM) and acoustic energy for use in defensive applications against a wide variety of threats in multiple domains. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	4.504	0.000	0.000	0.000	0.000
Title: Expeditionary Direct Energy ***Description:*** The Expeditionary Directed Energy activity develops laser and high-power microwave weapon systems to defend expeditionary platforms and expeditionary bases from a variety of threats in multiple domains. This can support vulnerability research for expeditionary threats, high energy laser and high powered microwave system architectures, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***	1.645	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1388 / *Directed Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	6.149	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1389 / *Electromagnetic Spectrum*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1389: *Electromagnetic Spectrum*	0.000	28.288	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.288

Note

Investments in Project 1389 Electromagnetic Spectrum are now funded in this same PE 0602750N under Project 1502 C5ISR/Naval Space.

A. Mission Description and Budget Item Justification

Electromagnetic Spectrum researches and develops electronics, sensors, electronic warfare, and alternate positioning, navigation, and timing to understand, shape, and operate in the battlespace. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Electromagnetic Warfare ***Description:*** Electromagnetic Warfare conducts applied research to mature underlying technologies, techniques, and algorithms that degrade, neutralize, or destroy an adversary's C4ISR capabilities. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	6.244	0.000	0.000	0.000	0.000
Title: Surveillance, Sensors and Phenomenology ***Description:*** Surveillance, Sensors and Phenomenology conducts applied research to mature sensing and systems technologies to deliver Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) data. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	8.510	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1389 / *Electromagnetic Spectrum*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Title: Quantum, Positioning, Navigation, and Timing ***Description:*** Quantum, Positioning, Navigation, and Timing develops technologies and techniques to improve Positioning, Navigation and Timing systems in a Global Positioning System-denied environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.278	0.000	0.000	0.000	0.000
Title: Expeditionary Electromagnetic Spectrum ***Description:*** Electromagnetic Spectrum researches and develops electronics, sensors, electronic warfare, and alternate positioning, navigation, and timing to understand, shape, and operate in austere and contested expeditionary environments in support of naval expeditionary forces. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	11.256	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	28.288	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1389 / *Electromagnetic Spectrum*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1391 / *Full Spectrum Cyber*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1391: *Full Spectrum Cyber*	0.000	13.264	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.264

Note

Investments in Project 1391 Full Spectrum Cyber are now funded in this same PE 0602750N under Project 1502 C5ISR/Naval Space.

A. Mission Description and Budget Item Justification

Full Spectrum Cyber explores and develops technologies necessary to conduct successful offensive and defensive naval and expeditionary force operations in the information age. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Full Spectrum Cyber ***Description:*** Full Spectrum Cyber develops innovative cyber technologies to enhance the resilience, safety, and efficiency of cyber systems in naval warfighting platforms. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	10.451	0.000	0.000	0.000	0.000
Title: Expeditionary Cyber ***Description:*** Expeditionary Cyber explores and develops technologies necessary to conduct successful offensive and defensive in contested environment tailored to naval expeditionary forces. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***	2.813	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1391 / *Full Spectrum Cyber*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	13.264	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1392 / *Human Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1392: *Human Systems*	0.000	16.607	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.607

Note

Investments in Project 1392 Human Systems are now funded in this same PE 0602750N under Project 1505 Human & Biological Systems.

A. Mission Description and Budget Item Justification

The objective of this project is to conduct human systems research and mature technologies that enhance Naval warfighting effectiveness and efficiency within the broad array of Warfighter Performance science and technology domains (Decision Sciences, Information Warfare and Future Conflict, Manpower, Personnel, Training and Education, Intelligent and Autonomous Systems) to a point where they can be proposed and continued as Future Naval Capabilities (FNC) in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Advanced Analytics and Decision Making ***Description:*** The Advanced Analytics and Decision Making research area applies new knowledge gained from the basic and applied research portfolio to address Navy specific needs through the development of technologies that improve the decision making process, enhance performance modeling, assessment, and After Action Reporting tools, and enable the use of cyber-technical and cyber-social capabilities in the information environment. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.511	0.000	0.000	0.000	0.000
Title: Autonomy, Artificial Intelligence, and Robotics ***Description:*** The Autonomy, Artificial Intelligence, and Robotics research area leverages emerging artificial intelligence techniques gained from the basic and applied research portfolio to develop technologies that address Navy specific needs such as enabling dynamic and unplanned sharing of resources for unmanned	2.917	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1392 / *Human Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
systems (platforms, payloads, data), increasing the capacity and resilience of logistics networks, and providing faster collaborative planning capabilities across competing missions, objectives, and warfighter needs. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Manpower, Training, and Performance Assessment ***Description:*** The Manpower, Training, and Performance Assessment research area applies new knowledge gained from the basic and applied research portfolio to develop technologies that enhance Fleet and Force readiness and lethality by: increasing the understanding and application of learning sciences; enhancing and preserving military members' capabilities to execute essential tasks under any conditions and environment; maintaining warfighting proficiency and readiness by providing mentoring, mission readiness assessment, and long-term trend and data analysis. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	8.179	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	16.607	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1392 / *Human Systems*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1393 / *Kinetic Weapons*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1393: *Kinetic Weapons*	0.000	10.831	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.831

Note

Investments in Project 1393 Kinetic Weapons are now funded in this same PE 0602750N under Project 1503 Directed Energy & Kinetic Systems.

A. Mission Description and Budget Item Justification

The Kinetic Weapons activity develops technologies to address the Navy and Marine Corps fires requirements for extended range, increased precision, decreased weapons fly-out times, greater destructive power, novel weapons effects, autonomy, human-machine teaming, reduced weapons costs, mission planning, and mass-producible swarming munitions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Kinetic Weapons	8.759	0.000	0.000	0.000	0.000
Description: Investigate and mature technologies in support of sub-systems applicable to current and/or future kinetic weapons systems, i.e., missiles, rockets, projectiles, bombs and mortars. Developmental areas include, but not limited to: propulsion, seekers, guidance, navigation and control; warheads, and related targeting, networking, and command and control systems. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Expeditionary Kinetic Weapons	2.072	0.000	0.000	0.000	0.000
Description: The Expeditionary Kinetic Weapons activity enhances the ability of naval expeditionary forces to strike at longer ranges, with greater precision, and using scalable weapons effects. This can also include new developments in weapon autonomy; new seekers for expeditionary weapons; next-generation precision, navigation, and timing in contested environments; human-machine teaming; decreasing the time to the target; collaboration of multiple kinetic weapons; and reducing overall weapon size, weight, power and cost. This can					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1393 / *Kinetic Weapons*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	10.831	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1394 / *Manufacturing*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1394: *Manufacturing*	0.000	2.013	6.816	7.815	-	7.815	7.760	7.376	7.528	7.658	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Manufacturing, Sustainment & Logistics	2.013	6.816	7.815	0.000	7.815

Description: The Manufacturing activity develops technologies that advance the design, fabrication, construction, repair, and sustainment of naval platforms. It represents the manufacturing, sustainment, and logistics areas previously identified under the Materials, Manufacturing, Sustainment, and Logistics Thrust.

FY 2026 Plans:

- Continue: Feasibility studies and technology development to explore next generation applications of manufacturing and sustainment in Navy and Marine Corps environments.

- Initiate: Laser Shock Peening of Submarine Steel (LASER SHOPSS)
- Initiate: Applied research for through coating nondestructive inspection.

FY 2027 Base Plans:

- Continue to expand feasibility studies and technology development to explore next generation applications of manufacturing and sustainment in Navy and Marine Corps environments.
- Continue Laser Shock Peening of Submarine Steel (LASER SHOPSS)
- Continue applied research for through coating non-destructive inspection.

FY 2027 OOC Plans:

N/A

FY 2026 to FY 2027 Increase/Decrease Statement:

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1394 / *Manufacturing*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase investment in manufacturing, sustainment, and logistics between FY2026 to FY2027 will be used to expand studies exploring next generation applications of manufacturing and sustainment in Navy and Marine Corps environments.					
Accomplishments/Planned Programs Subtotals	2.013	6.816	7.815	0.000	7.815

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1395 / *Materials*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1395: *Materials*	0.000	2.470	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.470

Note

Investments in Project 1395 Materials are now funded in this same PE 0602750N under Project 1506 Materials/Electronics.

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Materials ***Description:*** The Materials activity invests in applied research of new materials that enhance the performance, affordability, survivability, and reliability of Navy and Marine Corps platforms and systems. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	2.470	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	2.470	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1396 / *Naval Engineering*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1396: *Naval Engineering*	0.000	19.276	12.020	24.468	-	24.468	15.547	14.901	15.089	15.354	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Platform Design and Engineering	19.276	12.020	24.468	0.000	24.468
Description: The Naval Engineering activity improves design, fabrication, integration, and operation of ground and sea naval warfare platforms, sensors, weapons, networks, and countermeasures to maximize their operational availability and effectiveness. It represents areas previously identified under the Platform Design and Engineering Thrust. ***FY 2026 Plans:*** - Continue: Identify alternative undersea advanced material hull concepts that have an enhanced resistance to weapon effects and develop a high-fidelity predictive capability (COWER TC/HULC FNC) - Continue: Feasibility and utility studies for next generation undersea submersibles (OEX). - Continue: Applied Research into Own Ship Underwater Electromagnetic signature (OSEM-ML) - Continue: Develop a low signature, widely tunable (HF-SHF), room temperature quantum RF antenna for autonomous platform resilient communications and persistent ISR. (ATOMIC SCEPTER) - Initiate: Applied Research of advanced Radome materials and structures (BARREL-I) - Initiate: Applied Research into advanced Damage Control Technologies and Fire Suppression (SCORCH) ***FY 2027 Base Plans:*** - Complete: Identify alternative undersea advanced material hull concepts that have an enhanced resistance to weapon effects and develop a high-fidelity predictive capability (COWER TC/HULC FNC) - Continue: Feasibility and utility studies for next generation undersea submersibles (OEX). - Continue: Applied Research into Own Ship Underwater Electromagnetic signature (OSEM-ML)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1396 / *Naval Engineering*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue: Develop a low signature, widely tunable (HF-SHF), room temperature quantum RF antenna for autonomous platform resilient communications and persistent ISR. (ATOMIC SCEPTER) - Continue: Applied Research of advanced Radome materials and structures (BARREL-I) - Continue: Applied Research into advanced Damage Control Technologies and Fire Suppression (SCORCH) ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increased investment in Platform Design and Engineering from FY2026 to FY2027 will allow for expansion of applied research into advanced damage control and nondestructive technologies.					
Accomplishments/Planned Programs Subtotals	19.276	12.020	24.468	0.000	24.468

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1399 / *Ocean Battle Space Applications*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1399: *Ocean Battle Space Applications*	0.000	30.481	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	30.481

Note

Investments in Project 1399 Ocean Battle Space Applications are now funded in this same PE 0602750N under Project 1508 Undersea Systems and Project 1398 Ocean Atmosphere and Space Sciences.

A. Mission Description and Budget Item Justification

The objective of this project is to enable maritime domain access and distributed operations for Naval forces in contested environments through superior maritime battlespace awareness and threat detection, identification and neutralization. Specifically, activities will develop and mature technologies that ultimately support Mine and Expeditionary Warfare, Undersea Warfare, and Environmental Information Warfare. Activities will also develop and mature methods and technological approaches for environmental sensing and prediction for the maritime battlespace. The desired outcome for efforts in this activity is to mature the applied research results to a point where they can be focused on particular enabling capabilities and proposed to be continued as Future Naval Capabilities (FNC) in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development. Additionally, a subset of technologies explored herein are intended to support expeditionary access and will be further matured, focused, and ultimately demonstrated under the USMC's Advanced Technology Demonstration effort in PE 0603640M MC Advanced Technology Demo.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Mine and Expeditionary Warfare ***Description:*** To enable operational maritime maneuver and amphibious assault by driving down timelines to detect, identify, and neutralize mines and explosive hazards. To shape the undersea battlespace and restrict the maneuver of enemy maritime forces via advanced mining technologies. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.287	0.000	0.000	0.000	0.000
Title: Expeditionary Ocean & Battle Space Applications	6.323	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1399 / *Ocean Battle Space Applications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: This activity invests in the research related to the ability to conduct military operations in expeditionary and maritime environments is support of naval expeditionary forces. This can include antisubmarine warfare in the littorals and maritime choke points, mine warfare and explosive hazard defeat applications, and remote sensing. Research may span system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Undersea Warfare ***Description:*** To understand and exploit the physical ocean environment to gain a tactical advantage. Develop components, sensors, signal processing algorithms, and systems that improve distributed search, localization, and surveillance. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	5.749	0.000	0.000	0.000	0.000
Title: Environmental Information Warfare ***Description:*** Understand and predict the physical battlespace at time and space scales that are operationally relevant and exploit known physical maritime environmental phenomena from remote and tactical sensors. ***FY 2026 Plans:***	15.122	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1399 / *Ocean Battle Space Applications*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	30.481	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy										Date: April 2026		
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*				Project (Number/Name) 1400 / *Power and Energy*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
1400: *Power and Energy*	0.000	5.222	4.544	5.210	-	5.210	5.174	4.917	5.018	5.104	Continuing	Continuing

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval Power Systems	5.222	4.544	5.210	0.000	5.210
Description: The Power and Energy planned programs develop increasingly efficient, reliable, resilient, and abundant energy for Navy and Marine Corps infrastructure, platforms, systems, and equipment. Power and Energy technology investments seek to optimize power and energy density, energy efficiency, service life, reliability, low maintenance operation, safety, and cost. It represents areas previously identified under the Naval Power Systems Thrust. ***FY 2026 Plans:*** - Continue: Power Electronics Power Distribution System (PEPDS) applied research. - Initiate: Transient Reducing Active Power System (TRAPS) - Initiate: Improvement in fuel formulation for increased range of mission system (Otto Fuel Revision) ***FY 2027 Base Plans:*** - Continue: Power Electronics Power Distribution System (PEPDS) applied research. - Continue: Transient Reducing Active Power System (TRAPS) - Continue: Improvement in fuel formulation for increased range of mission systems (Otto Fuel Revision). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** An increase in investment between FY2026 and FY2027 in Naval Power Systems will be used to initiate improved undersea endurance and reducing active power systems to improve naval lethality.					
Accomplishments/Planned Programs Subtotals	5.222	4.544	5.210	0.000	5.210

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1400 / *Power and Energy*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1401 / *Undersea Systems Payloads and Weapons*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1401: *Undersea Systems Payloads and Weapons*	0.000	3.130	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	3.130

Note

Investments in Project 1401 Undersea Systems Payloads and Weapons are now funded in this same PE 0602750N under Project 1508 Undersea Systems.

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Undersea Weapons ***Description:*** The Undersea Systems, Payloads, and Weapons activity produces innovative affordable, persistent, and stealthy undersea technologies that leverage the asymmetric advantage afforded by subsurface operations. It represents areas previously identified under the Undersea Weapons Thrust. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	3.130	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	3.130	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1502 / *C5ISR/Naval Space*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1502: *C5ISR/Naval Space*	0.000	0.000	104.837	80.782	-	80.782	60.799	62.010	53.363	46.699	Continuing	Continuing

Note

All Expeditionary Investments in Project 1502 C5ISR/Naval Space have been realigned in this same PE 0602750N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and marine corps priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Command, Control, Computers, Communications, Cyber, Intelligence, Surveillance, Reconnaissance, and Naval Space activity researches and develops technology for the naval force to obtain decisive competitive advantage across the range of naval missions and levels of warfare. The objective of this project is to develop and mature technologies in data science, mathematical optimization, computational and information sciences, electronics, electronic warfare (EW), command and control (C2), combat systems, communications, cyber security, cyber operations, microelectronics, electromagnetic warfare (EMW), sensing and surveillance, and quantum precision timing and navigation (PNT). These technologies, if successful, will continue to advance in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Communications and Networking	0.000	8.222	7.278	0.000	7.278
Description: Communications and Networking develops technologies and techniques that enable distributed maritime operations. ***FY 2026 Plans:*** Continue: - Maturing promising over the horizon communications that include low probability of detection and low probability of intercept features to enable distributed maritime operations. - Development of multi-beam communications for data dissemination and unmanned and autonomous control applications. - Development of software defined modem technologies for waveform interoperability, low probability of intercept and joint service compatibility. Complete: - Analyzing Fifth generation (5G) security and protocols to identify vulnerabilities to close security gaps to increase resiliency and robustness against adversarial attack.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Initiate: - Development of advanced antennas for next generation sonobuoy communications. ***FY 2027 Base Plans:*** - Continue maturing promising over the horizon communications that include low probability of detection and low probability of intercept features to enable distributed maritime operations. - Continue development of multi-beam communications for data dissemination and unmanned and autonomous control applications. - Continue development of software defined modem technologies for waveform interoperability, low probability of intercept and joint service compatibility. - Continue development of advanced antennas for next generation sonobuoy communications. - Initiate development of commercial of the shelf (COTS) 5G technology for integrated fire control. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to the completion of 5G security analyses.					
Title: Intelligence, Decision-Making Superiority, C2 and Combat Systems ***Description:*** Intelligence, Decision-Making Superiority, C2 and Combat Systems conducts applied research dedicated to developing decision tools to allow Commanders to rapidly and confidently move from data-to-options-to-informed decisions. ***FY 2026 Plans:*** Continue: - Optimization of machine learning and AI algorithms for planning to execution synchronization of hard kill, cyber and electromagnetic engagements. - Development of advanced computing for machine learning on the tactical edge. - Development of multi-level security protocols and solutions for Distributed Maritime Operations (DMO). Complete:	0.000	4.426	3.918	0.000	3.918

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Developing frameworks for cross platform intelligent resource management and data dissemination providing both enhanced Distributed Maritime Operations and system resilience. Initiate: - Development of algorithms and optimization for reducing uncertainty in logistics planning tools. ***FY 2027 Base Plans:*** - Continue optimization of machine learning and AI algorithms for planning to execution synchronization of hard kill, cyber and electromagnetic engagements. - Continue development of advanced computing for machine learning on the tactical edge. - Continue development of multi-level security protocols and solutions for Distributed Maritime Operations (DMO). - Continue development of algorithms and optimization for reducing uncertainty in logistics planning tools. - Initiate development of algorithms for automation, optimization and control of VLS resources to shorten integration times. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease is due to completion of development of frameworks for cross platform intelligent resource management.					
Title: Full Spectrum Cyber ***Description:*** Full Spectrum Cyber develops innovative cyber technologies to enhance the resilience, safety, and efficiency of cyber systems in naval warfighting platforms. ***FY 2026 Plans:*** Continue: - Developing tools for coordinating cyber and EW effects. - Machine learning for autonomous cyber defense approaches. - Efforts to exploit protocol weaknesses for naval applications. - Efforts in protocol dialecting for resilience and threat identification. - Collaborative algorithm and software development with stakeholders and partners.	0.000	21.999	13.679	0.000	13.679

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete: - Efforts to automate leveraging of over-permissioned protocol implementations. - Development of comprehensive, large-scale Modeling and simulation (M&S) environment for characterization of AI/ML techniques. Initiate: - Developing tools to analyze and understand resilience of data fusion methods. ***FY 2027 Base Plans:*** - Continue developing tools for coordinating cyber and EW effects. - Continue developing machine learning for autonomous cyber defense approaches. - Continue efforts to exploit protocol weaknesses for naval applications. - Continue efforts in protocol dialecting for resilience and threat identification. - Continue collaborative algorithm and software development with stakeholders and partners. - Continue developing tools to analyze and understand resilience of data fusion methods. - Initiate development of a cost effective, highly performant, portable and power efficient AI supercomputer for use in marine environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY2027 reflects the completion of a comprehensive, large-scale Modeling and simulation (M&S) environment.					
Title: Expeditionary Cyber ***Description:*** Expeditionary Cyber explores and develops technologies necessary to conduct successful offensive and defensive in contested environment tailored to naval expeditionary forces. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** Complete:	0.000	2.290	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research to improve warfighter effectiveness in contested command, control, computers and communication, intelligence, surveillance and reconnaissance environments using electromagnetic spectrum analysis, signature management, and by enhancing expeditionary platform cyber/spectrum resilience. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602750N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and naval priorities.					
Title: Electromagnetic Warfare ***Description:*** Electromagnetic Warfare conducts applied research to mature underlying technologies, techniques, and algorithms that degrade, neutralize, or destroy an adversary's C4ISR capabilities. ***FY 2026 Plans:*** Continue: - Developing technologies, techniques and algorithms that degrade, neutralize, or destroy an adversary's C5ISRT capabilities. - Developing cross platform technologies to mature electro-magnetic techniques that rely on geographic separation of platform sensors to deliver enhanced operational capabilities. - Developing and maturing the necessary component technologies for spectrum access both in EO and RF that enable defeat of adversarial sensors and systems. - Developing Counter ISR technology to defeat and degrade EO sensor and seekers. - Research and development of integrated electronic warfare and cyber effects. Initiate:	0.000	9.672	8.337	0.000	8.337

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of small compact EO/IR airborne payload to degrade optical seekers. ***FY 2027 Base Plans:*** - Continue development of technologies, techniques and algorithms that degrade, neutralize, or destroy an adversary's C5ISRT capabilities. - Continue development of cross platform technologies to mature electro-magnetic techniques that rely on geographic separation of platform sensors to deliver enhanced operational capabilities. - Continue development and maturation of the necessary component technologies for spectrum access both in EO and RF that enable defeat of adversarial sensors and systems. - Continue development of Counter ISR technology to defeat and degrade EO sensors and seekers. - Continue research and development of integrated electronic warfare and cyber effects. - Complete development of small compact EO/IR airborne payload to degrade optical seekers. - Initiate development and demonstration of real-time detection, parameterization, geolocation & reporting of Low Peak Power (LPP) complex emissions across the microwave band utilizing commercial innovative platforms. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to reduced investments in compact EO/IR technologies.					
Title: Surveillance, Sensors and Phenomenology ***Description:*** Surveillance, Sensors and Phenomenology conducts applied research to mature sensing and systems technologies to deliver Intelligence, Surveillance, Reconnaissance and Targeting (ISR&T) data. ***FY 2026 Plans:*** Continue: - Developing and implementing novel hardware, algorithms and high-speed processing to enable detection of advanced maritime threats in both manmade and natural clutter at stand-off ranges. - Developing and implementing new electro-optic and infrared sensing capabilities including digital readouts for improved passive sensing of difficult threats in cluttered backgrounds. - Developing advanced sensor processing that improve Intelligence, Surveillance, Reconnaissance and Targeting of hard targets.	0.000	12.264	10.571	0.000	10.571

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of multi-platform surveillance techniques and algorithms. Complete: - Developing polarimetric techniques for improving clutter and identification in maritime radars. Initiate: - Development of advanced sensor array management algorithms to improve raid annihilation of advanced threats. ***FY 2027 Base Plans:*** - Continue development and implementation of novel hardware, algorithms and high-speed processing to enable detection of advanced maritime threats in both manmade and natural clutter at stand-off ranges. - Continue development and implementation of new electro-optic and infrared sensing capabilities including digital readouts for improved passive sensing of difficult threats in cluttered backgrounds. - Continue development of advanced sensor processing that improves Intelligence, Surveillance, Reconnaissance and Targeting of hard targets. - Continue development of advanced sensor array management algorithms to improve raid annihilation of advanced threats. - Complete development of multi-platform surveillance techniques and algorithms. - Initiate development of novel, active, electro-optic, short-range sensor for detecting and tracking of swarming UAS. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to reduced investments in multi-platform surveillance technologies.					
Title: Quantum, Positioning, Navigation, and Timing ***Description:*** Quantum, Positioning, Navigation, and Timing develops technologies and techniques to improve Positioning, Navigation and Timing systems in a Global Positioning System-denied environment.	0.000	1.616	1.393	0.000	1.393

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: Continue: - Development of quantum gravimetry mapping and navigation techniques. - Development of magnetic mapping and navigation techniques. ***FY 2027 Base Plans:*** - Continue development of quantum gravimetry mapping and navigation techniques. - Complete development of magnetic mapping and navigation techniques. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Expeditionary Electromagnetic Spectrum	0.000	5.539	0.000	0.000	0.000
Description: Electromagnetic Spectrum researches and develops electronics, sensors, electronic warfare, and alternate positioning, navigation, and timing to understand, shape, and operate in austere and contested expeditionary environments in support of naval expeditionary forces. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** Complete: - Development of enabling sensor technologies to support targeting to counter unmanned aerial systems and future swarms, tailored to expeditionary on-the-move design reference missions, using scalable/low-cost approaches. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Research to develop correlation / fusion Artificial Intelligence/Machine Learning engines to fuse feeds from up to six austere and expeditionary maritime domain awareness nodes. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602750N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and naval priorities.					
Title: Chimera (INP) ***Description:*** Details at a higher classification level. ***FY 2026 Plans:*** Continue development of Information Warfare applied research efforts. Details at a higher classification ***FY 2027 Base Plans:*** Continue development of Information Warfare applied research efforts by: - Scaling models and algorithms for integrated prototypes. - Details at a higher classification. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to the maturation of the applied research in this program element (PE) and project, and the associated migration of efforts and a planned increase in the advanced technology development investment in PE 0603673N, Project 2966.	0.000	38.809	25.606	0.000	25.606
Title: Bright Eyes (INP) ***Description:*** Details at a higher classification level. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate Bright Eyes INP by:	0.000	0.000	10.000	0.000	10.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1502 / *C5ISR/Naval Space*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Analyzing candidate signal processing algorithms for both shipboard and airborne radar systems. - Down selecting most appropriate algorithms for best performance in both maritime surface and airborne environments. - Awarding contracts to various prime contractors. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due initiation of analysis of candidate sign procession algorithms for shipboard and airborne radar systems.					
Accomplishments/Planned Programs Subtotals	0.000	104.837	80.782	0.000	80.782

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1503 / *Directed Energy & Kinetic Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1503: *Directed Energy & Kinetic Systems*	0.000	0.000	33.682	31.501	-	31.501	24.663	24.754	25.264	25.696	Continuing	Continuing

Note

All Expeditionary Investments in Project 1503 Directed Energy & Kinetic Systems have been realigned in this same PE 0602750N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and marine corps priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Directed Energy & Kinetic Systems activity develops technologies to advance Naval applications of both directed energy (DE) and kinetic weapons. The main focus of DE weapons is to develop technologies that enable laser and high-power microwave (HPM) weapon systems, within Navy and Marine Corps size, weight, and power (SWAP) constraints, to strike enemy targets and to defend naval platforms and land bases from threats. Additionally, the DE activity develops technologies that enable defense against adversary DE systems. The main focus of kinetic weapons is to develop technologies that address the Navy and Marine Corps fires requirements for extended range; increased precision; decreased weapons fly-out times; greater destructive power and novel effects; autonomy, swarming, and human-machine teaming; mission planning and decision making; reduced production costs, and increased inventory and availability.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Directed Energy	0.000	3.380	4.770	0.000	4.770
Description: Investigate and mature technologies related to High Power Microwave (HPM) and acoustic energy for use in defensive applications against a wide variety of threats in multiple domains. ***FY 2026 Plans:*** Continue: - Advancement of HPM tunable source technology to adapt to evolving threats via electronic attack methods. - Development of enabling technologies for accelerated DE weapon engagements in ship based terminal defense, including advanced tracking solutions, automated engagement algorithms and novel battle damage assessment methods. - Mature and integrate technologies related to distributed arrays of HPM sources, enabled by improved phase control solid state modulators. - Investigate short pulsed laser source development, utility and integration studies, propagation and lethality assessments for Naval applications.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete: - Development of compact High Power Microwave (HPM) antenna technology with reduced size, weight and cost to enable integration into Marine Corps tactical ground vehicles, and broaden effort for additional platforms. Initiate: - Developing technologies to fill the S&T gaps to enable the fielding of high energy laser weapons to defeat cruise missiles. - Investigation and development of novel laser source and thermal/cooling technology, standardized beam control components/systems, and evaluation of modular component concepts for decreased size, weight and power while maintaining efficiency. ***FY 2027 Base Plans:*** - Continue advancement of High Power Microwave (HPM) tunable source technology to adapt to evolving threats via electronic attack methods. - Continue maturing and integrating technologies related to distributed arrays of HPM sources, enabled by improved phase control solid state modulators. - Continue investigating pulsed laser source development, utility and integration studies, propagation and lethality assessments for Naval applications. Developing technologies to fill the S&T gaps to enable the fielding of high energy laser weapons to defeat cruise missiles. - Continue investigation and development of novel laser source and thermal/cooling technology, standardized beam control components/systems, and evaluation of modular component concepts for decreased size, weight and power while maintaining efficiency. - Complete development of enabling technologies for accelerated DE weapon engagements in ship based terminal defense, including advanced tracking solutions, automated engagement algorithms and novel battle damage assessment methods. - Initiate investigation into new HPM sources that offer higher power and higher pulse repetition frequencies with the goal to counter multi-modal and multi-spectral threats, as well as threats at greater standoff ranges. Development of HPM lethality curves for use in modeling and simulation to better understand how HPM contributes to a layered ship self-defense as well as to provide requirements for source, antenna, and pulsed modulator designs for future HPM systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate study the effects of High Energy Laser (HEL) at various powers against relevant target materials, to inform the requirements for HEL weapons for a variety of CONOPS. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase between FY26 and FY27 is due to greater investment in technologies related to improving Directed Energy system componentry and subsystems (in terms of size, weight, power usage, cost, power output, and efficiency). There is also increased investment in technology that forms an early baseline to enable investigation into structural and combat system integration options on host platforms.					
Title: Expeditionary Directed Energy ***Description:*** The Expeditionary Directed Energy activity develops laser and high-power microwave weapon systems to defend expeditionary platforms and expeditionary bases from a variety of threats in multiple domains. This can support vulnerability research for expeditionary threats, high energy laser and high powered microwave system architectures, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** Complete: - Research in the area of increased range and lethality for small form factor weapon systems in support of EABO. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Develop flexible, intermediate force capability to defend against small unmanned aerial vehicle (UAV) swarm attacks as well as civilian vehicles in congested urban environments for protection of relatively small, dispersed advanced expeditionary bases in the littorals operating within the operational engagement envelop of a potential adversary. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Develop generalized technique for synchronizing compact, mobile amplifier-HPM nodes to form a scalable, distributed HPM (DHPM) source network that will determine, in real time, optimal coupling spectrum of the target(s) for increased target susceptibility and lethality. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	0.000	2.160	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602750N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and marine corps priorities.					
Title: Kinetic Weapons ***Description:*** Investigate and mature technologies in support of sub-systems applicable to current and/or future kinetic weapons systems, i.e., missiles, rockets, projectiles, bombs and mortars. Developmental areas include, but not limited to: propulsion, seekers, guidance, navigation and control; warheads, and related targeting, networking, and command and control systems. ***FY 2026 Plans:*** Continue: - Feasibility studies and possible development of terminal defense fire control architectures that support low cost and easy integration onto ships and into expeditionary forces for terminal defense suitable for multiple engagement weapons. - Investigation into varied technologies that could mitigate impacts of adverse navigational environments upon weapon systems employed in denied areas. - Investigation into advanced propulsion techniques for high speed weapons; main focus on air-breathing concepts. Study and development of air-launched missile concepts in response to evolving requirements for both anti-air and anti-surface applications. Define the key component technologies and associated maturation roadmaps required to enable the transition of these weapon concepts to meet planned future weapons development. - Development and maturation of key enabling missile component technologies that are necessary to meet the Fleet's requirement to: engage both air and surface targets at greater ranges, reduce weapon size to increase launch platform carriage capacity, and introduce affordability to meet the need for weapon quantity. - Investigation of technologies needed for delivering autonomous weapons with complete kill chain coverage to both manned and unmanned surface vessels and airborne platforms. Emphasis will be on developing containerized, modular, and platform agnostic systems.	0.000	16.050	20.995	0.000	20.995

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Investigation of technologies needed to increase capacity of shipboard launch systems in both numbers and types of weapons. Also, investigate possible application of industrial automation techniques to weapon handling and loading. Complete: - Investigating advanced material and structural capabilities in aerodynamics for high-speed/hypersonic weapons. Initiate: - Development of multi-objective optimization engine to coordinate shore-based fires with Naval Long Range Fires by air and surface shooters. - Investigate incorporation of additive manufacturing processes and novel materials into future weapons concepts in order to reduce weight and manufacturing complexity. ***FY 2027 Base Plans:*** - Continue feasibility studies and possible development of terminal defense fire control architectures that support low cost and easy integration onto ships and into expeditionary forces for terminal defense suitable for multiple engagement weapons. - Continue investigation into advanced propulsion techniques for high speed weapons; main focus on air-breathing concepts. - Continue study and development of air-launched missile concepts in response to evolving requirements for both anti-air and anti-surface applications. Define the key component technologies and associated maturation roadmaps required to enable the transition of these weapon concepts to meet planned future weapons development. - Continue development and maturation of key enabling missile component technologies that are necessary to meet the Fleet's requirement to: engage both air and surface targets at greater ranges, reduce weapon size to increase launch platform carriage capacity, and introduce affordability to meet the need for weapon quantity. - Continue investigation of technologies needed for delivering autonomous weapons with complete kill chain coverage to both manned and unmanned surface vessels and airborne platforms. Emphasis will be on developing containerized, modular, and platform agnostic systems. - Continue investigating incorporation of additive manufacturing processes and novel materials into future weapons concepts in order to reduce weight and manufacturing complexity.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete investigation into varied technologies that could mitigate impacts of adverse navigational environments upon weapon systems employed in denied areas. - Complete investigation of technologies needed to increase capacity of shipboard launch systems in both numbers and types of weapons. Also, investigate possible application of industrial automation techniques to weapon handling and loading. Development of multi-objective optimization engine to coordinate shore-based fires with Naval Long Range Fires by air and surface shooters. - Initiate investigation into novel materials, energetics, and designs for development of advanced warheads, enabling increased effects with potentially reduced size and weight. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase between FY26 and FY27 is due to greater investment in technologies leading to broader, more affordable, and potentially more effective means for shipboard terminal defense. Offensively, there is increased investment in missile technology to achieve greater performance, affordability, and capacity.					
Title: Expeditionary Kinetic Weapons ***Description:*** The Expeditionary Kinetic Weapons activity enhances the ability of naval expeditionary forces to strike at longer ranges, with greater precision, and using scalable weapons effects. This can also include new developments in weapon autonomy; new seekers for expeditionary weapons; next-generation precision, navigation, and timing in contested environments; human-machine teaming; decreasing the time to the target; collaboration of multiple kinetic weapons; and reducing overall weapon size, weight, power and cost. This can include system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** Complete: - Research to improve warfighter effectiveness in command, control, computers and communication, intelligence, surveillance and reconnaissance in the area of electromagnetic spectrum analysis and signature management. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism)	0.000	2.262	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Research effort to provide a counter-swarm solution using a swarm of networked low-cost kinetic interceptors. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602750N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and marine corps priorities.					
Title: Manned and Autonomous Teams (MATes) (INP)	0.000	4.950	4.804	0.000	4.804
Description: Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The activity identified in Project Unit 3463 MATes specifically addresses Applied Research in support of the MATes effort. ***FY 2026 Plans:*** Continue all activities from FY25 to include those focused on:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Autonomy, perception, and command and control (C2) concepts for Manned and Autonomous Teams (MATES) conducting complex multi-domain operations in proximity to each other along a spectrum of missions. Missions range from fully autonomous to highly supervised requiring an agile optimization as real-world factors change. - Autonomy, perception, and command and control (C2) concepts for MATES conducting complex multi-domain operations in proximity to each other along a spectrum of missions. - Demonstration of multiple autonomy architectures across multiple domains conducting re-optimizing behaviors based on changing mission parameters and perception data. Agents will be Super Swarm (PRJ 3459) agents, and efforts will mutually inform tactical behavior, perception, and autonomy schemas. - Experiments to validate command and control with different levels of human oversight and trust. Initiate: - Experiments to sequentially "phase" C2 of massed Super Swarm agents from close-in, dense, tightly controlled areas with continuous network coverage out to the maximum range where fully autonomous behavior is expected. - Experiments to test Super Swarm (PRJ 3459) agents in scenarios requiring AI-enabled perception of current manned blue teammate behavior states, derivation of anticipated future states, and evaluation of potential reactions to state changes.					
FY 2027 Base Plans: Complete the Applied Research for the MATes INP by: - Completing autonomy, perception, and command and control (C2) concepts for MATES conducting complex multi-domain operations in proximity to each other along a spectrum of missions. - Completing demonstration of multiple autonomy architectures across multiple domains conducting re-optimizing behaviors based on changing mission parameters and perception data. - Completing experiments to validate command and control with different levels of human oversight and trust. - Completing experiments to sequentially "phase" C2 of massed Super Swarm agents from close-in, dense, tightly controlled areas with continuous network coverage out to the maximum range where fully autonomous behavior is expected. - Completing experiments to test Super Swarm (PRJ 3459) agents in scenarios requiring AI-enabled perception of current manned blue teammate behavior states, derivation of anticipated future states, and evaluation of potential reactions to state changes.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY 2026 to FY 2027 is due to planned execution of the remaining BA2 activities in the final year of Applied Research for the MATes INP Activity in this Project.					
Title: Precision Fire Control (INP)	0.000	4.880	0.932	0.000	0.932
Description: The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components. ***FY 2026 Plans:*** Continue - Integration of multi-function data link (MFDL) 2 fire control element. - Procurement of 5 Hypervelocity Projectiles (HVP) and 20 Low-Cost Terminal Defense Missiles (LCTDM) flight test units and test targets. - Interceptor guidance testing with HVP and LCTDM. - Combat systems integration studies. Complete - Combat systems integration studies. - Design and prototyping of Precision Fire-Control (PFC) Increment 2 fire control elements. ***FY 2027 Base Plans:*** Complete Applied Research for the Precision Fire Control INP by: - Completing a fire control architecture that delivers high precision and update rate guidance solution to enable cruise missile defense with multiple low-cost interceptors (missiles and gun projectiles). - Completing the Modeling and simulation (M&S) tools and technical data package. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1503 / *Directed Energy & Kinetic Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 in the Precision Fire Control (PFC) INP is due to completion in FY 2027 of all PFC applied research efforts					
Accomplishments/Planned Programs Subtotals	0.000	33.682	31.501	0.000	31.501

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1505 / *Human & Biological Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1505: *Human & Biological Systems*	0.000	0.000	19.598	19.420	-	19.420	17.380	17.215	17.570	17.872	Continuing	Continuing

Note

Investments in Project 1505 Human & Biological Systems were previously funded in this same PE 0602750N under the Biomedical Project 1386 and the Human Systems Project 1392. This new Project was created to promote greater transparency and execution oversight for Technical Candidate investments in Directed Energy & Kinetic Systems in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

Increasing the understanding of how human and biological systems operate and then applying those principles to integrated human and technological systems is essential for winning during military operations. The objective of this project is to develop and deploy knowledge and technologies that maximize and enhance warfighter performance, safety, and combat casualty care in maritime environments.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Human Performance and Medical Support	0.000	1.948	2.600	0.000	2.600
Description: The Human Performance and Medical Support research area applies new knowledge gained from the basic and applied science biomedical research portfolio to address Navy specific needs, such as protecting warfighters from operational health threats including medical challenges associated with hypothermal and hyperbaric exposure, developing diagnostic and treatment capabilities for use in operational environments, and prototyping new capabilities to recover injured warfighters.					
FY 2026 Plans: - Continue development of plasma Gelsolin as a therapeutic, prophylactic and/or screening tool for Decompression Sickness (DCS). - Continue feasibility studies to explore next generation applications of human performance and medical support in Navy and Marine Corps environments. -Initiate development of autonomous casualty care and evacuation capabilities that will improve medical logistics in contested maritime environments.					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue the development of plasma Gelsolin as a therapeutic, prophylactic and/or screening tool for Decompression Sickness (DCS). - Continue feasibility studies to explore next generation applications of human performance and medical support in Navy and Marine Corps environments. - Continue development of autonomous casualty care and evacuation capabilities that will improve medical logistics in contested maritime environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to an increased investment in the development of autonomous casualty care and evacuation capabilities that will improve medical logistics in contested maritime environments.					
Title: Advanced Analytics and Decision Making ***Description:*** The Advanced Analytics and Decision Making research area applies new knowledge gained from the basic and applied research portfolio to address Navy specific needs through the development of technologies that improve the decision making process, enhance performance modeling, assessment, and After Action Reporting tools, and enable the use of cyber-technical capabilities in the information environment. ***FY 2026 Plans:*** - Complete applied research to identify segmentation and algorithms to integrate into existing software applications to automatically identify man-made structures in 2D and 3D datasets - Continue design of human-centered models and decision support tools that enable collaboration between humans and AI-agents to improve decision making by Naval Commanders (e.g., Carrier Strike Group Commanders or Infantry Battalion). - Continue design maturation of human attuned machine learning (HAML) services, training data for building outlines to address multivariant buildings and form, fit, function of strike targets. - Continue feasibility studies to explore next generation applications of advanced analytics and decision making in Navy and Marine Corps environments. - Initiate design of automated feature outlining services for 3D mesh-based terrain and architecture to support integration into Navy program of record applications.	0.000	4.427	4.045	0.000	4.045

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate design tools to capture key decisions and significant events during submarine simulation and training and data visualization that illustrate the submarine crew's decision-making processes for use in simulation training and debriefs and trend analysis. ***FY 2027 Base Plans:*** - Complete design maturation of human attuned machine learning (HAML) services, training data for building outlines to address multivariant buildings and form, fit, function of strike targets. - Complete design of automated feature outlining services for 3D mesh-based terrain and architecture. - Continue design of human-centered models and decision support tools that enable collaboration between humans and AI-agents to improve decision making by Naval Commanders (e.g., Carrier Strike Group Commanders or Infantry Battalion). - Continue feasibility studies to explore next generation applications of advanced analytics and decision making in Navy and Marine Corps environments. - Continue development of design tools to capture key decisions and significant events during submarine simulation and training and data visualization that illustrate the submarine crew's decision-making processes for use in simulation training and debriefs and trend analysis. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY2026 to FY2027 is due to completion of the automated feature outlining services for 3D mesh-based terrain and architecture.					
Title: Autonomy, Artificial Intelligence and Robotics ***Description:*** The Autonomy, Artificial Intelligence, and Robotics research area leverages emerging artificial intelligence techniques gained from the basic and applied research portfolio to develop technologies that address Navy specific needs such as enabling dynamic and unplanned sharing of resources for unmanned systems (platforms, payloads, data), increasing the capacity and resilience of logistics networks, and providing faster collaborative planning capabilities across competing missions, objectives, and warfighter needs. ***FY 2026 Plans:*** - Complete development and testing a profiling buoy that can be deployed by multiple means with submerging and surfacing capabilities for tactical data collections and communications.	0.000	3.412	3.125	0.000	3.125

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue fabrication and integration of ultra-low power, small-scale processor chips suitable for AI model training and use into small Navy underwater platforms and evaluate performance on automatic target recognition and mapping. - Continue feasibility studies to explore next generation applications of autonomy, artificial intelligence, and robotics in Navy and Marine Corps environments. - Initiate design, development, and improvement of prototype systems for artificial intelligence-enabled Command, Control and Communications (C3) for autonomous planning, distribution, reaction and recovery of UxVs. ***FY 2027 Base Plans:*** - Complete fabrication and integration of ultra-low power, small-scale processor chips suitable for AI model training and use into small Navy underwater platforms and evaluate performance on automatic target recognition and mapping. - Continue design, development, and improvement of prototype systems for AI-enabled Command, Control and Communications (C3) for autonomous planning, distribution, reaction and recovery of UxVs. - Continue feasibility studies to explore next generation applications of autonomy, artificial intelligence, and robotics in Navy and Marine Corps environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the completion and integration of ultra-low power, small-scale processor chips suitable for AI model training into small Navy underwater platforms.					
Title: Manpower, Training, and Performance Assessment	0.000	9.811	9.650	0.000	9.650
Description: The Manpower, Training, and Performance Assessment research area applies new knowledge gained from the basic and applied research portfolio to develop technologies that enhance Fleet readiness and lethality by: increasing the understanding and application of learning sciences; enhancing and preserving military members' capabilities to execute essential tasks under any conditions and environment; maintaining warfighting proficiency and readiness by providing mentoring, mission readiness assessment, and long-term trend and data analysis. ***FY 2026 Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete applied research on a Modular, Live-Virtual-Constructive integrated warfare environment to support training, mission rehearsal, and assessment of Carrier Strike Group and Air Wing forces while at sea. - Complete architecture and capabilities for automated real-time data tagging for long term data analytics and trend analysis across carrier airwing events. - Continue to test and validate adaptive training approaches that include automated assessment and adaptive scenarios to accelerate training of ship handling skills for bridge personnel. - Continue studies and design of next generation human performance applications and interventions focused on operational risk management processes for fatigue. - Initiate effort to analyze and identify high value Non-Kinetic Effects, including inject methodologies and After-Action Review enhancements, to the Find, Fix, Track, Target, Engage, Assess (F2T2EA) kill chain. - Initiate rapid prototyping and lab-based testing of architectural advances to enable end-to-end Non-Kinetic Effects across the Live, Virtual, and Constructive training enterprise. - Initiate rapid prototyping and lab-based testing of After-Action Review enhancements, representing Non-Kinetic Effects and demonstrate Information Warfare impact to mission effectiveness. - Initiate development of Live, Virtual, and Constructive capabilities for the Carrier Strike Group to organically conduct mission rehearsal while at sea on deployment.					
FY 2027 Base Plans: - Complete testing and validation of adaptive training approaches that include automated assessment and adaptive scenarios to accelerate training of ship handling skills for bridge personnel. - Continue studies and design of next generation human performance applications, algorithm refinement, and interventions focused on operational risk management processes for fatigue. - Continue to analyze and identify high value Non-Kinetic Effects, including inject methodologies and After-Action Review enhancements, to the Find, Fix, Track, Target, Engage, Assess (F2T2EA) kill chain. - Continue rapid prototyping and lab-based testing of architectural advances to enable end-to-end Non-Kinetic Effects across the Live, Virtual, and Constructive training enterprise. - Continue to conduct rapid prototyping and lab-based testing of After-Action Review enhancements, representing Non-Kinetic Effects and demonstrate Information Warfare impact to mission effectiveness. - Continue development of Live, Virtual, and Constructive capabilities for the Carrier Strike Group to organically conduct mission rehearsal while at sea on deployment. - Initiate design of scalable and readily interpretable Operational Risk Management (ORM) recommendations, for Surface Force.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1505 / *Human & Biological Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY2026 to FY2027 is due to completion of testing and validation of adaptive training approaches to accelerate training of ship handling skills for bridge personnel.					
Accomplishments/Planned Programs Subtotals	0.000	19.598	19.420	0.000	19.420

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1506 / *Materials/Electronics*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1506: *Materials/Electronics*	0.000	0.000	1.514	1.737	-	1.737	1.726	1.640	1.673	1.702	Continuing	Continuing

Note

Investments in Project 1506 Materials/Electronics were previously funded in this same PE 0602750N under the Materials Project 1395. This RDTE project was created to promote greater transparency and execution oversight for Technical Candidate investments in aerospace sciences in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Materials	0.000	1.514	1.737	0.000	1.737
Description: The Materials activity invests in applied research of new materials that enhance the performance, affordability, survivability, and reliability of Navy and Marine Corps platforms and systems.					
FY 2026 Plans: - Continue: Developing protective topcoat materials that meet military specifications and are selectively removed with environmentally friendly chemical strippers. - Continue: Manufacturing Maturation of Textured Piezoceramics (TxPC): Development and maturation of the manufacturing technology of textured piezoelectric ceramics. - Initiate: Feasibility studies and technology development to explore next generation applications of Power and Energy technologies in Navy and Marine Corps environments.					
FY 2027 Base Plans: - Continue: Developing protective topcoat materials that meet military specifications and are selectively removed with environmentally friendly chemical strippers. - Continue: Manufacturing Maturation of Textured Piezoceramics (TxPC): Development and maturation of the manufacturing technology of textured piezoelectric ceramics.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1506 / *Materials/Electronics*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue: Feasibility studies and technology development to explore next generation applications of Power and Energy technologies in Navy and Marine Corps environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY2026 to FY2027 will allow expansions of the studies started in FY2026 to explore next generation applications of Power and Energy technologies in the Navy and Marine Corps Environments.					
Accomplishments/Planned Programs Subtotals	0.000	1.514	1.737	0.000	1.737

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1507 / *Naval Aerospace*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1507: *Naval Aerospace*	0.000	0.000	22.575	42.155	-	42.155	35.538	23.394	14.541	7.998	Continuing	Continuing

Note

Investments in Project 1507 Naval Aerospace were previously funded in this same PE 0602750N under the Aerospace Sciences Project 1385 and from PE 0602792N Innovative Naval Prototypes (INP) Applied Research, Project 5901 STARDANCAR-M. This RDTE Project was created to promote greater transparency and execution oversight for Technical Candidate investments in aerospace sciences in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

The Naval Aerospace activity develops technologies for the science and engineering of flight from the land and sea surfaces to the edge of the atmosphere, and as applicable to the utilization of flight for aircraft, missiles, rockets, munitions, and unmanned systems (UxS) employed by the Navy and Marine Corps forces operating from naval platforms or land locations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Air Platforms	0.000	6.241	8.162	0.000	8.162
Description: Investigate and mature technologies in support of delivering capabilities or improvements to aviation platforms (manned/unmanned) and air-ship operations; and developing other technologies specific to the air domain or aviation regime.					
FY 2026 Plans: Continue: - Investigating and maturing system of systems concepts and associated technologies necessary to fully implement manned-unmanned teaming operations. - Investigation into a suite of technologies leading to more robust shipboard recovery capabilities for air platforms (manned and unmanned). - Studying all phases of kill chain to determine which set of technologies (from detection through tracking to engagement) would provide most tactically effective, cost effective, and implementable solution for self-defense of high value, low density aircraft against next generation advanced threats. - Investigation into processes and techniques to improve production and/or repair of air vehicle structural materials and coatings with emphasis on improvements to corrosion protection and electrical conductivity. Complete:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Investigation into concepts and technologies necessary to achieve greater operational capability from unmanned aerial systems. Initiate: - Investigation into air platform concepts and technologies leading to greater operational capability for manned and unmanned aircraft, in particular enhanced range and lethality. - Investigation and development of concepts delivering revolutionary and scalable launch & recovery system capabilities for uncrewed aerial systems at high volume and operational tempo.					
FY 2027 Base Plans: - Continue investigation into a suite of technologies leading to more robust shipboard recovery capabilities for air platforms (manned and unmanned). Efforts will center on technologies to enhance training. - Continue studying all phases of kill chain to determine which set of technologies (from detection through tracking to engagement) would provide most tactically effective, cost effective, and implementable solution for self-defense of high value, low density aircraft against next generation advanced threats. - Continue investigation into air platform concepts and technologies leading to greater operational capability for manned and unmanned aircraft, in particular enhanced range and lethality. - Continue investigation and development of concepts delivering revolutionary and scalable launch & recovery system capabilities for uncrewed aerial systems at high volume and operational tempo. - Complete Investigating and maturing system of systems concepts and associated technologies necessary to fully implement manned-unmanned teaming operations. - Complete investigation into processes and techniques to improve production and/or repair of air vehicle structural materials and coatings with emphasis on improvements to corrosion protection and electrical conductivity. - Initiate investigation into processes and techniques to improve production and/or repair of air vehicle structural materials and coatings with emphasis on improvements to methods for rapid inspection, evaluation, and repair of composite structure damage resulting from battle or severe weather.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding increase from FY 2026 to FY2027 is due to greater investment in technologies related to improving Unmanned Aerial System (UAS) shipboard operations and tactical utilization. There is also increased investment in technologies leading to maintaining and/or increasing operational availability (AO) of Fleet air assets.					
Title: STARDANCAR-M (INP)	0.000	1.500	0.000	0.000	0.000
Description: The Small Turbofan Augmentor with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) effort will add a Rotating Detonation Augmentor (RDA) to small engines, decreasing the burning length: - Autonomous Collaborative Aircraft (ACA) with RDA will keep up with tactical vehicles - Missiles with RDA will achieve higher speeds - Subsonic missiles will have increased evasion capabilities and terminal velocity					
FY 2026 Plans: Complete - Risk Reduction Testing - Air Vehicle and Propulsion Model - Military Utility Study - Program Plan & Budget for INP Initiate/Complete - Numerical Propulsion System Simulation (NPSS) cycle deck model					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease in funding from FY 2026 to FY 2027 in STARDANCAR-M is due to program completion in FY 2026.					
Title: FLight Advancement of Structures for Hypersonics (FLASH) (INP)	0.000	14.834	33.993	0.000	33.993
Description: The Flight Advancement of Structures for Hypersonics (FLASH) Innovative Naval Prototype (INP) program integrates advanced hypersonic vehicle technologies that will demonstrate the viability of the concept to be fielded as a surface-launched, tactical range, hypersonic strike capability. FLASH will design, develop, manufacture, and test a number of prototype flight vehicles to inform decisions concerning the FLASH capability. FLASH will address vehicle aerodynamic and thermal performance, structural performance, vehicle controllability, and affordability related to its technologies and assess compatibility with the Vertical Launch System (VLS) and the Virginia Payload Module (VPM). ***FY 2026 Plans:*** Business Area 2 -Perform a Mission Engineering Analysis and Operational Analysis (OA) to inform mission level performance requirements -Perform aerodynamic/thermal trajectory modeling and simulation to inform system materials capability and vehicle trajectory requirements -Execute applied research and prototype testing of program identified Critical Technology Enablers (CTEs) Business Area 3 -Perform system engineering analyses to develop system functional and performance requirements -Establish and manage requirements baseline -Perform system requirements decomposition to subsystems -Perform a System Requirements and Design Review (SRDR) ***FY 2027 Base Plans:*** - Continue performing a Mission Engineering Analysis and Operational Analysis (OA) to inform mission-level performance requirements. - Continue performing aerodynamic/thermal trajectory modeling and simulation to inform system materials capability and vehicle trajectory requirements. - Continue executing applied research and prototype testing of program-identified Critical Technology Enablers (CTEs).					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete performing system engineering analyses to develop system functional and performance requirements. - Complete establishing and managing requirements baseline. - Complete performing system requirements decomposition to subsystems. - Complete performing a System Requirements and Design Review (SRDR). - Complete performing a Preliminary Design Review (PDR). - Initiate analytical studies and computational modeling to establish proof-of-concept for novel, high-performance aerodynamic shapes and control surface functions. - Initiate Hypersonic wind tunnel test campaigns to validate analytical predictions of aerodynamic and aerothermal characteristics for representative vehicle configurations. - Initiate analytical studies to evaluate the feasibility of innovative, high-temperature structural and thermal protection system (TPS) concepts and materials. - Initiate high temperature ground test campaigns (i.e. arc jets and plasma torches) to validate TPS materials in a relevant environment. - Initiate modeling and simulation to demonstrate proof-of-concept for the fundamental performance of advanced control actuation system components and high-temperature seals. - Initiate proof-of-concept design on thermal battery power supply and validation in a laboratory environment. - Initiate analytical and laboratory studies to identify and characterize advanced instrumentation and sensor technologies for future testing requirements. - Initiate analytical studies to increase manufacturability and lower costs associated with fabrication, integration and deployment of FLASH vehicle.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The increase in funding from FY 2026 to FY 2027 reflects the program's planned maturation from computational analysis to ground test. The FY 2027 budget enables the critical next step of applied research: the design, fabrication, and detailed testing of physical hardware. This funding supports resource-intensive activities including hypersonic wind tunnel campaigns and extensive laboratory testing of key vehicle elements such as high-temperature structural components, thermal protection systems, and advanced control actuation systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1507 / *Naval Aerospace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
This investment in physical testing is required to validate analytical models and provides the necessary empirical data and risk reduction to mature the critical technologies required for the full-scale flight demonstration vehicle.					
Accomplishments/Planned Programs Subtotals	0.000	22.575	42.155	0.000	42.155

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1508 / *Undersea Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1508: *Undersea Systems*	0.000	0.000	66.338	66.120	-	66.120	56.529	50.418	35.665	36.276	Continuing	Continuing

Note

All Expeditionary Investments in Project 1508 Undersea Systems have been realigned in this same PE 0602750N under Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary and marine corps priorities. This new Project was created to provide greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

This project develops and matures technologies that enable superior warfighting capabilities for surface and sub-surface naval platforms, undersea weapons and countermeasures, and Marine Corps technologies to a point where they can be proposed and continued as Future Naval Capabilities in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Mine and Expeditionary Warfare	0.000	3.377	0.000	0.000	0.000
Description: To enable operational maritime maneuver and amphibious assault by driving down timelines to detect, identify, and neutralize mines and explosive hazards. To shape the undersea battlespace and restrict the maneuver of enemy maritime forces via advanced mining technologies.					
FY 2026 Plans: Complete: -Development of high area coverage rate mine warfare capability for contested environments to support naval maneuver in Western Pacific; this includes development of enabling machine learning algorithms, autonomous behavior, and hardware which enables autonomous systems to conduct long-duration, low-observable seabed surveys. - Development of a common encapsulation system supporting a variety of effectors; this includes technical development of effector capability, technical modification to support modular encapsulation, and technical investigation options associated with integrated delivery. - Development of advanced diagnostics, communications, endurance, and neutralization technologies to improve access, range, C2, sensing, localization and lethal effects of the Navy EOD Expeditionary Stand-off Response System.					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY2026 to FY2027 is due to the realignment of funding from the Mine and Expeditionary Warfare planned program to the Ocean Battlespace Sensing planned program within the same PE and Project. The purpose of this realignment is to better describe the research investments within this activity and to align to Navy priorities.					
Title: Undersea Warfare ***Description:*** To understand and exploit the physical ocean environment to gain a tactical advantage. Develop components, sensors, signal processing algorithms, and systems that improve distributed search, localization, and surveillance. ***FY 2026 Plans:*** Complete: - In-water comparative analysis/testing of glider towed arrays for detection of ASW threats in the ocean environment; leverage emerging glider technologies for increased endurance and consider novel array fabrication to characterize best fit for variety of ocean environments. - Development of signal processing and displays to improve performance and reduce vulnerability for submarine active sonar. - Development of computational methods to detect very quiet submarine targets by combining evidence from multiple arrays. - Development of algorithms and software for making probabilistic USW-related sensor performance forecasts that can be used in strike group and theater anti-submarine warfare mission plans. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***	0.000	5.894	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY2026 to FY2027 is due to the realignment of funding from the Undersea Warfare planned program to the Ocean Battlespace Sensing planned program within the same PE and Project. The purpose of this realignment is to better describe the research investments within this activity and to align to Navy priorities.					
Title: Environmental Information Warfare ***Description:*** Understand and predict the physical battlespace at time and space scales that are operationally relevant and exploit known physical maritime environmental phenomena from remote and tactical sensors. ***FY 2026 Plans:*** Complete: - Development of algorithms and software for making probabilistic USW-related sensor performance forecasts that can be used in strike group and theater anti-submarine warfare mission plans. - Development of algorithms to assess and predict the impact of the atmospheric aerosols and turbulence on the performance of electro-optic and infra-red naval sensors. - Algorithm development for improved cloud visibility assessment by leveraging new government-owed, open architecture paradigm in Space-Based Environmental Monitoring (SBEM) data processing and delivery needed to improve timely, accurate decision making in the maritime battlespace environment. -To apply system learning to tactical environment assessment and prediction in support of aviation applications. -Development of improvements to polar ionosphere sensing and prediction for a regional full-physics model leveraging recently developed sensors and advances in polar space weather science. - Development of a fully coupled ionospheric-thermospheric model to permit greatly improved multi-day forecasts for propagation conditions of HF communications and radars. - Characterization of Earth science model error in decision support tools by examining forecast fidelity from short-term (hourly) to sub-climate (monthly) timescales using a hierarchy of data quality, from full coupled dynamical simulations to regional, statistical, and climatological guidance. - Development of the numerical representation of improved tropospheric-stratospheric interaction and mesospheric data assimilation for gravity wave processes leading to extended range prediction of extreme weather events - Algorithm development for improved cloud visibility assessment by leveraging new government-owed, open architecture paradigm in Space-Based Environmental Monitoring (SBEM) data processing and delivery needed to improve timely, accurate decision making in the maritime battlespace environment.	0.000	15.148	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Application of system learning to tactical environment assessment and prediction in support of aviation applications. - New government-owed, open architecture paradigm in Space-Based Environmental Monitoring (SBEM) data processing and delivery needed to improve timely, accurate decision making in the maritime battlespace environment. - Development of a prototype radio frequency (RF) communications and signature management tool for small unit maneuver in the coastal and terrestrial environments to assess the environmental variability spatially and temporally. Continue: - Development of a fully coupled ionospheric-thermospheric model to permit greatly improved multi-day forecasts for propagation conditions of HF communications and radars. - Development of the numerical representation of improved tropospheric-stratospheric interaction and mesospheric data assimilation for gravity wave processes leading to extended range prediction of extreme weather events. Initiate and Complete: - Research into starlight Transmittance through Aerosol Restricted maRine skY (STARRY) - Research into High-latitude Impacts of Particle Precipitation on the Ionosphere (HIPPI) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding decrease from FY2026 to FY2027 is due to the realignment of funding from the Environmental Information Warfare planned program to the Ocean Battlespace Sensing planned program within the same PE and Project. The purpose of this realignment is to better describe the research investments within this activity and to align to Navy priorities.					
Title: Undersea Weapons	0.000	3.787	4.342	0.000	4.342

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The Undersea Systems, Payloads, and Weapons activity produces innovative affordable, persistent, and stealthy undersea technologies that leverage the asymmetric advantage afforded by subsurface operations. It represents areas previously identified under the Undersea Weapons Thrust. ***FY 2026 Plans:*** - Complete: Advanced Torpedo Tactics - Initiate: Otto Fuel Revision tech candidate. Improvement in fuel formulation for increased range of mission systems. - Initiate: Next generation Subsea and Seabed Warfare (SSW) Weapons ***FY 2027 Base Plans:*** - Continue: Otto Fuel Revision tech candidate. Improvement in fuel formulation for increased range of mission systems. - Continue: Next generation Subsea and Seabed Warfare (SSW) Weapons ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Increase in funding in FY27 is due to increased research into Next generation Subsea and Seabed Warfare (SSW) Weapons					
Title: Expeditionary Ocean & Battle Space Applications ***Description:*** This activity invests in the research related to the ability to conduct military operations in expeditionary and maritime environments is support of naval expeditionary forces. This can include antisubmarine warfare in the littorals and maritime choke points, mine warfare and explosive hazard defeat applications, and remote sensing. Research may span system studies, system architecture development, and component and/or breadboard validation in laboratory environments. ***FY 2026 Plans:*** Complete:	0.000	5.177	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of acoustic and non-acoustic sensors and transduction systems as a means to provide next-generation sensing technologies to provide undersea monitoring and tracking in the littorals by expeditionary forces. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Development of automated sonar processing, sensor command and control, sensor networks, and data exfiltration in order to enable expeditionary Antisubmarine Warfare/Undersea Warfare systems in the littorals and maritime choke points. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Development of night-time and low-light electro-optical sensors for real-time, computer vision based automatic target detection of explosive hazards and airfield damage from unmanned aerial and ground platforms. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding under PE 0602750N to the new Expeditionary Campaigns project number 1510 within this PE. Planned programs will continue under new Expeditionary Campaigns project number and have been updated to align to current expeditionary and marine corps priorities.					
Title: Full Spectrum Undersea Warfare (FSUSW) (INP) ***Description:*** The FSUSW Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. FSUSW will address three thrusts identified in the Undersea Warfare Development Command's document, "Full Spectrum Undersea Warfare Concept of Operations (CONOPS)". These thrusts are: advanced offensive missions for submarines, subsea and seabed warfare, and distributed undersea warfare. Distributed undersea warfare technology will enable full participation of all undersea warfare assets in the Navy's Distributed Maritime Operations concept. FSUSW missions this Project addresses include Anti-Submarine Warfare (ASW), Anti Surface Warfare, Strike, Intelligence, Surveillance, and Reconnaissance, Mine Warfare, and Subsea and Seabed Warfare (SSW). The FSUSW Project includes the Affordable Mobile ASW Surveillance System (AMASS) research and will leverage technology developed in the separate PE 06022792N, Project Unit 3450, AMOS. ***FY 2026 Plans:***	0.000	32.955	29.487	0.000	29.487

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue: - Advanced Technology Development associated with the Multi-Vehicle Torpedo Tube Deployment System (MVTTDS) prototype for Virginia Class submarines, which includes Revolver and Reloader including at sea (on a submarine) Revolver prototype testing and model validation - Spiral development build of GEN 2 Revolver, incorporating capability improvements for objective payloads Complete: - Design of GEN 2 Reloader design - Advanced development of components and system for at sea operations, including resiliency and reliability of 3 inch Submarine Launched UAV hardware and software for select missions. Initiate: - Build of GEN 2 Revolver - Testing of GEN 1 Revolver with UAV and decoy devices ***FY 2027 Base Plans:*** Continue the Full Spectrum Undersea Warfare INP by working the following tasks: - Continue 3rd generation Unmanned Undersea Vehicle (UUV) virtual and in water testing - Demonstrate UUV & Unmanned Aerial Vehicle (UAV) autonomy, including UUV digital simulation - Conduct Undersea munitions effects characterization phase 2 - Finish Phase 1 of Undersea munitions effects characterization - Build of GEN 2 Revolver - Testing of GEN 1 Revolver with UAV and decoy devices ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the planned decrease in Applied Research activities and the completion of some applied research efforts which transition to Advanced Technology Development in PE 0603673N Future Naval Capabilities Advanced Tech Dev Project 2966.					
Title: Ocean Battlespace Sensing	0.000	0.000	32.291	0.000	32.291
Description: The objective of this project is to enable maritime domain access and distributed operations for Naval forces in contested environments through superior maritime battlespace awareness and threat detection, identification and neutralization. Specifically, activities will develop and mature technologies that ultimately support Mine and Expeditionary Warfare, Undersea Warfare, and Environmental Information Warfare. Activities					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
will also develop and mature methods and technological approaches for environmental sensing and prediction for the maritime battlespace. The desired outcome for efforts in this activity is to mature the applied research results to a point where they can be focused on particular enabling capabilities and proposed to be continued as Future Naval Capabilities (FNC) in program element (PE) 0603673N, Future Naval Capabilities Advanced Technology Development. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Mine and Expeditionary Warfare: Initiate: -Develop ultra-low size, weight, and power (SWaP) computing payloads and machine learning algorithms for unmanned mine hunting systems. New hardware designs interfaced with sensors vastly improves automated seabed interrogation and perception. -Development of high area coverage rate mine warfare capability for contested environments to support naval maneuver in Western Pacific; includes development of enabling machine learning algorithms, autonomous behavior, and hardware design. -Development of high area coverage rate mine warfare capability for contested environments to support naval maneuver in Western Pacific; this includes development of enabling machine learning algorithms, autonomous behavior, and hardware which enables autonomous systems to conduct long-duration, low-observable seabed surveys. - Development of a common encapsulation system supporting a variety of effectors; this includes technical development of effector capability, technical modification to support modular encapsulation, and technical investigation options associated with integrated delivery. - Development of advanced diagnostics, communications, endurance, and neutralization technologies to improve access, range, C2, sensing, localization and lethal effects of the Navy EOD Maritime Expeditionary Stand-off Response (MESR) System. Undersea Warfare: Initiate:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- In-water comparative analysis/testing of glider towed arrays for detection of ASW threats in the ocean environment; leverage emerging glider technologies for increased endurance and consider novel array fabrication to characterize best fit for variety of ocean environments. - Development of signal processing and displays to improve performance and reduce vulnerability for submarine active sonar. - Development of computational methods to detect very quiet submarine targets by combining evidence from multiple arrays. - Development of algorithms and software for making probabilistic USW-related sensor performance forecasts that can be used in strike group and theater anti-submarine warfare mission plans. Initiate and Complete: - Development of acoustic sources for floating and mobile anti-submarine warfare (ASW) sensing systems. - Development of unmanned undersea vehicle (UUV) navigation concepts that fuse multiple sensing modalities into a single solution to improve performance in long duration complex environments. Environmental Information Warfare: Initiate: - Development of algorithms to assess and predict the impact of the atmospheric aerosols and turbulence on the performance of electro-optic and infra-red naval sensors. - Algorithm development for improved cloud visibility assessment by leveraging new government-owed, open architecture paradigm in Space-Based Environmental Monitoring (SBEM) data processing and delivery needed to improve timely, accurate decision making in the maritime battlespace environment. - To apply system learning to tactical environment assessment and prediction in support of aviation applications. - Development of improvements to polar ionosphere sensing and prediction for a regional full-physics model leveraging recently developed sensors and advances in polar space weather science. - New government-owed, open architecture paradigm in Space-Based Environmental Monitoring (SBEM) data processing and delivery needed to improve timely, accurate decision making in the maritime battlespace environment. - Development of a prototype radio frequency (RF) communications and signature management tool for small unit maneuver in the coastal and terrestrial environments to assess the environmental variability spatially and temporally. - Research into improved vertical placement of features such as cloud and aerosol layers based on two-dimensional satellite remote sensing observational data.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Development of a fully coupled ionospheric-thermospheric model to permit greatly improved multi-day forecasts for propagation conditions of HF communications and radars. - Characterization of Earth science model error in decision support tools by examining forecast fidelity from short-term (hourly) to sub-climate (monthly) timescales using a hierarchy of data quality, from full coupled dynamical simulations to regional, statistical, and climatological guidance. - Development of the numerical representation of improved tropospheric-stratospheric interaction and mesospheric data assimilation for gravity wave processes leading to extended range prediction of extreme weather events. - Development of high area coverage rate mine warfare capability for contested environments to support naval maneuver in Western Pacific; includes development of enabling machine learning algorithms, autonomous behavior, and hardware design. - Development of a fully coupled ionospheric-thermospheric model to permit greatly improved multi-day forecasts for propagation conditions of HF communications and radars. - Development of the numerical representation of improved tropospheric-stratospheric interaction and mesospheric data assimilation for gravity wave processes leading to extended range prediction of extreme weather events. - Research into starlight Transmittance through Aerosol Restricted maRine skY (STARRY) - Research into High-latitude Impacts of Particle Precipitation on the Ionosphere (HIPPI) Initiate and Complete: - Development of improvements to polar ionosphere sensing and prediction for a regional full-physics model leveraging recently developed sensors and advances in polar space weather science. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY2026 to FY2027 is due to the realignment of funding from the Mine and Expeditionary Warfare, Undersea Warfare, and Environmental Information Warfare planned programs to the Ocean Battlespace Sensing planned program within the same PE and Project. The purpose of this realignment is to better describe the research investments within this activity and to align to Navy priorities.					
Accomplishments/Planned Programs Subtotals	0.000	66.338	66.120	0.000	66.120

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1508 / *Undersea Systems*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 1510 / *Expeditionary Campaign*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1510: *Expeditionary Campaign*	0.000	0.000	0.000	18.531	-	18.531	17.754	19.901	20.312	16.005	Continuing	Continuing

Note

Investments in Project 1510 Expeditionary Campaign were previously funded in this same PE 0602750N under Project 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems and 1508 Undersea Systems. Planned programs have been updated to align to current expeditionary priorities. This new Project was created to promote greater transparency and execution oversight for expeditionary applied research investments in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

Technology Candidates supporting Expeditionary and Naval Forces. The objective is to develop and mature technologies needed by the Navy to initiate FNCs that can be commenced at higher Technology Readiness Levels (TRLs). The FNC Program is structured to accelerate the transition of new technologies to the Fleet and Force. Each effort is assessed for its technology maturity and transition commitment.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Command, Control, Communications, and Computers (C4)	0.000	0.000	2.359	0.000	2.359
Description: This activity investigates robust, resilient, and secure networked communications pathways and capability that support an expeditionary force's distributed and disaggregated operations. Research supports both networked and local computation for communications that exploits the expeditionary forces close physical proximity to threats while mitigating shortfalls commiserate within denied, degraded, intermittent, or limited (DDIL) communications environments. Expeditionary forces must operate in the cyber domain and in addition to defending communications networks, vehicles, and weapons systems, are reliant on electronic controllers for basic operations and as such are susceptible to cyber attacks.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: - Initiate an effort to develop automated sonar processing and sensor command and control to Naval Expeditionary platforms/systems to contribute to the Undersea Warfare (USW) fight.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0602750N from planned program in Projects 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems and 1508 Undersea Systems into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Force Protection ***Description:*** This activity investigates new ways and means to protect forces and materiel across all domain threats in all operational settings, from contested maritime, air, and land domains, to include complex urban environments. The portfolio protects against adversaries' challenges such as guided-rockets and missiles, mobile coastal artillery, threat electronic warfare, and counter intelligence, surveillance and reconnaissance, and waterborne threats from ports, harbors, and in the littorals. Mines and obstacles, both in the water and ashore, also complicate amphibious operations. The activity invests in vehicle survivability aspects that are exacerbated due to size, weight, power, and cost constraints inherent to expeditionary operations and the harsh nature of maritime environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Initiate research in the area of increased range and lethality for small form factor weapon systems in support of EABO. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Initiate research to improve warfighter effectiveness in command, control, computers and communication, intelligence, surveillance and reconnaissance in the area of electromagnetic spectrum analysis and signature management. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) - Initiate the development of acoustic and non-acoustic sensors and transduction systems as a means to provide next-generation sensing technologies to provide undersea monitoring and tracking in the littorals by expeditionary forces. (Expeditionary Maneuver Warfare (EMW) and Combating Terrorism) (UNSEEN) - Initiate research to develop flexible, intermediate force capability to defend against small unmanned aerial vehicle (UAV) swarm attacks as well as civilian vehicles in congested urban environments for protection of relatively small, dispersed advanced expeditionary bases in the littorals operating within the operational engagement envelop of a potential adversary. - Initiate research to develop generalized technique for synchronizing compact, mobile amplifier-HPM nodes to form a scalable, distributed HPM (DHPM) source network that will determine, in real time, optimal coupling spectrum of the target(s) for increased target susceptibility and lethality.	0.000	0.000	12.352	0.000	12.352

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research effort to provide a counter-swarm solution using a swarm of networked low-cost kinetic interceptors. - Initiate subsystems research for a fused, multimodal, in-stride detection and neutralization program to rapidly detect and reduce explosive hazards. (In-stride Detect, Avoid, and Neutralize) - Initiate heterogeneous sensors to expedite port damage and repair assessments from unmanned systems. (Port Damage Assessment Technologies) ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0602750N from planned program in Projects 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems and 1508 Undersea Systems into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Human Performance, Training and Education	0.000	0.000	3.272	0.000	3.272
Description: This activity investigates two technology investment areas: warrior resilience, and decision-making and expertise development. Warrior resilience is focused on advanced training technologies and methodologies that enhance neural, cognitive, and physical readiness. Decision making and expertise development accelerates and improves the advancement in retention of skills in decision making, situation awareness, including individual and team adaptability and coordination on decentralized, dynamic and dispersed battlefields. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Initiate research to develop portable Live, Virtual, and Constructive (LVC) kits that enable standalone or integrated training within a contested littoral or maritime operating environment for forward deployed units. - Initiate research to develop AI applications to support gaming scenario summaries, debriefs, interactive reflection, and assessment/evaluation. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0602750N from planned program in Projects 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems and 1508 Undersea Systems into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.					
Title: Logistics ***Description:*** This activity investigates the practical discipline and real world application of the deployment, sustainment, reconstitution, and re-deployment of forces engaged in expeditionary operations. Logistics replaces mass with assured knowledge and speed, is equally capable ashore or afloat in austere environments, and is fully scalable to meet uncertain requirements. This includes efficient and responsive force sustainment, planning and directing logistics operations, logistics demand reduction, fleet maintenance, and expeditionary energy. Expeditionary Energy enhances combat capability of expeditionary warfighters by increasing the efficiency and effectiveness of energy production, storage, distribution and use. Beyond traditional energy efforts, this portfolio also looks at other issues, including energy-efficient behaviors and hybridization of energy sources. These pillars are thoroughly integrated and perpetually related in execution. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Initiate research to develop rapid, field executable (forward deployed) composite structural repair technologies. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the realignment and consolidation of all expeditionary funding requirements within PE 0602750N from planned program in Projects 1502 C5ISR/Naval Space, 1503 Directed Energy & Kinetic Systems and 1508 Undersea Systems into the new Project 1510 Expeditionary Campaign. Planned programs have been updated to align to current expeditionary priorities.	0.000	0.000	0.548	0.000	0.548
Accomplishments/Planned Programs Subtotals	0.000	0.000	18.531	0.000	18.531

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 1510 / *Expeditionary Campaign*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 5891 / *Naval S&T Ops Analysis, Supp & Experimentation Act*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5891: *Naval S&T Ops Analysis, Supp & Experimentation Act*	0.000	0.000	4.763	4.702	-	4.702	4.729	4.622	4.705	4.786	Continuing	Continuing

Note

Investments in Project 5891 INP Operational Analysis, Support and Experimentation Activity were previously funded in this same PE 0602750N under the Future Naval Capabilities Applied Research Project 0000 and under PE 0602792N Innovative Naval Prototypes (INP) Applied Research Project 5891 INP Operational Analysis, Support and Experimentation Activity,
This RDTE Project was created to promote greater transparency and execution oversight for Technical Candidate investments in FNC and INP Applied Research in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

Operational Analysis, Support and Experimentation Activity was established to broaden the spectrum of promising applied research efforts investigated within this Project and to provide
additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level.
The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) and Future Naval Capability (FNC) Operational Analysis, Support and Experimentation Activity efforts that are used to further explore the development of future INP and FNC topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP and FNC topics for future investment consideration. The use of Operational Analysis, Support and Experimentation Activity funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP or FNC topic for consideration in a more time-efficient and/or effective manner.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: FNC Program Management Support	0.000	2.763	2.799	0.000	2.799
FY 2026 Plans: - Continue FNC Management - Support/Analysis - Conduct warfighter sustainment Applied Research and analysis, including technology management of FNC investments supporting the naval capability focus areas.					
FY 2027 Base Plans: Continue FNC Management - Support/Analysis - Conduct warfighter sustainment Applied Research and analysis, including technology management of FNC investments supporting the naval capability focus areas.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 5891 / *Naval S&T Ops Analysis, Supp & Experimentation Act*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: INP Program Management Support ***Description:*** Operational Analysis, Support and Experimentation was established to broaden the spectrum of promising applied research efforts investigated within this Project and to provide additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level. The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) Operational Analysis, Support and Experimentation efforts that are used to further explore the development of future INP topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP topics for future investment consideration. The use of Operational Analysis, Support and Experimentation funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP topic for consideration in a more time-efficient and/or effective manner. ***FY 2026 Plans:*** - Continue program support and applied research activities associated with exploring the development of future INP topics and proposals. - Continue to evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities to inform and identify potential future INP investment areas. ***FY 2027 Base Plans:*** - Continue program support and applied research activities associated with exploring the development of future INP topics and proposals. - Continue to evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities to inform and identify potential future INP investment areas. ***FY 2027 OOC Plans:***	0.000	2.000	1.903	0.000	1.903

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 5891 / *Naval S&T Ops Analysis, Supp & Experimentation Act*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027 in INP Program Management Support.					
Accomplishments/Planned Programs Subtotals	0.000	4.763	4.702	0.000	4.702

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*				Project (Number/Name) 5893 / *Decision Superiority*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
5893: *Decision Superiority*	0.000	10.860	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.860

Note

Investments in Project 5893 Decision Superiority are now funded in this same PE 0602750N under Project 1502 C5ISR/Naval Space.

A. Mission Description and Budget Item Justification

Decision Superiority researches and develops communications, networking, information processing, analysis, decision making, and understanding to obtain decisive advantage across the spectrum of naval missions and warfare.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Communications and Networking ***Description:*** Communications and Networking develops technologies and techniques that enable distributed maritime operations. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	4.308	0.000	0.000	0.000	0.000
Title: Intelligence, Decision-Making Superiority, C2 and Combat Systems ***Description:*** Intelligence, Decision-Making Superiority, C2 and Combat Systems conducts applied research dedicated to developing decision tools to allow Commanders to rapidly and confidently move from data-to-options-to-informed decisions. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:***	6.552	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602750N / *Future Naval Capabilities Applied Research*	**Project (Number/Name)** 5893 / *Decision Superiority*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	10.860	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602750N / *Future Naval Capabilities Applied Research*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	28.961	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.961

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Quantum Communications Corridor ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop applied research concept for quantum communications corridor.	0.000	9.654
Congressional Add: ATRT enterprise ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop applied research concept for ATRT enterprise.	0.000	19.307
Congressional Adds Subtotals	0.000	28.961

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602782N *I Mine and Expeditionary Warfare Applied Research*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	29.294	18.081	24.634	-	24.634	26.616	26.582	27.901	28.255	Continuing	Continuing
0000: *Mine and Expeditionary Warfare Applied Research*	0.000	28.329	18.081	24.634	-	24.634	26.616	26.582	27.901	28.255	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.965	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.965

A. Mission Description and Budget Item Justification

Sea mines remain a significant threat to ships. In fact, fifteen U.S. Navy ships have been sunk or damaged by mines since World War II, almost four times more than any other weapon. The Mine and Expeditionary Warfare Applied Research Program Element (PE) provides technologies for Naval Mine Countermeasures (MCM), Expeditionary Warfare, U.S. Naval sea mining, Naval Special Warfare (NSW), and Joint Tri-Service Explosive Ordnance Disposal (EOD) as well as continuing support to research vessels of the U.S. Academic Research Fleet for operations and maintenance that enable applied research at sea. This program strongly aligns with the Joint Chiefs of Staff Joint Warfighting Capability Objectives through the development of technologies to achieve military objectives with minimal casualties and collateral damage. This investment will enable Ship-to-Objective Maneuver (STOM) and focus on technologies that will provide the Naval Force with the capability to dominate the battlespace, project power from the sea, and support forces ashore with particular emphasis on rapid MCM operations. These efforts concentrate on the development and transition of technologies for the MCM-related and Urban Asymmetric/Expeditionary Warfare Operations (UAEO)-related Future Naval Capabilities (FNC) Enabling Capabilities (ECs).

The Mine and Obstacle Detection and Neutralization efforts include technologies for clandestine and overt minefield reconnaissance, organic ship self-protection, organic mine hunting and neutralization/breaching. The Urban Asymmetric Operation effort includes critical warfighting functions such as Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR), fires, maneuver, sustainment, etc. The Naval Special Warfare and Explosive Ordnance Disposal technology efforts concentrate on the development of technologies for safe near-shore mine detection, diver mobility and survivability, and ordnance disposal operations. The activities described in this PE address future Navy and Marine Corps capabilities needed to maintain maritime superiority and ensure national security. They are based on input from Naval Research Enterprise stakeholders including the Naval enterprises, the combatant commands, Office of the Chief of Naval Operations (OPNAV) and Headquarters Marine Corps and are designed to exploit breakthroughs in science and technology in order to deliver maximum warfighting benefit to our sailors and Marines. These efforts align with shared priorities throughout the whole of RDT&E in order to quickly advance new capabilities from discovery to deployment across the warfighting domains.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602782N *I Mine and Expeditionary Warfare Applied Research*

This Program Element (PE) funds Applied Research, which is the systematic study to understand the means to meet a recognized and specific need. Most of the work in this PE can be classified between Technology Readiness Level (TRL) 2 (technology concept and/or application formulation) and TRL 4 (component and/or breadboard validation in laboratory environments).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

The FY 2026 spend plan amount for Research, Development, Test and Evaluation, Navy includes $18,081 thousand of discretionary and $80,000 thousand of mandatory (reconciliation) for a total of $98,081.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	32.460	29.081	30.310	-	30.310
Current President's Budget	29.294	18.081	24.634	-	24.634
Total Adjustments	-3.166	-11.000	-5.676	-	-5.676
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-11.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.294	0.000			
• SBIR/STTR Transfer	-0.871	0.000			
• Program Adjustments	0.000	0.000	-5.676	-	-5.676
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Geophysical sensing & characterization of mine-hun*	0.965	0.000
Congressional Add Subtotals for Project: 9999	0.965	0.000
Congressional Add Totals for all Projects	0.965	0.000

Change Summary Explanation

Funding: Reduction in funding in FY27 of $5.676M due to rebalancing of funding within Departmental priorities and realignment to support expansion of industrial base.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602782N *I Mine and Expeditionary Warfare Applied Research*

Schedule: N/A

Program: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	Project (Number/Name) 0000 / *Mine and Expeditionary Warfare Applied Research*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Mine and Expeditionary Warfare Applied Research*	0.000	28.329	18.081	24.634	-	24.634	26.616	26.582	27.901	28.255	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Project focuses on reducing the time involved in conducting Mine Countermeasure (MCM) operations and increasing safe standoff from minefields. It develops and transitions technologies for MCM-related and UAEO-related Future Naval Capabilities (FNC). The MIW effort includes technologies for clandestine and overt minefield reconnaissance, organic ship self-protection, organic mine-hunting, neutralization/breaching and clearance. The Littoral Warfare effort includes critical warfighting functions such as C4ISR, fires, maneuver, sustainment. The sea mining effort emphasizes technologies for future sea mines. The Naval Special Warfare and Explosive Ordnance technology efforts concentrate on the development of technologies to enhance diver capabilities including: safe near-shore mine sensing, mobility and survivability, and ordnance disposal operations.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Mine Technology	2.084	0.232	1.840	0.000	1.840
Description: This activity primarily focuses on developing and demonstrating technologies to support on-demand battlespace shaping through advanced undersea weapons and next generation mining concepts. Efforts include Command & Control to support remote control, advanced sensing technologies, compatibility with options for unmanned delivery, detection & classification, and targeting solutions. Mine technology research supports Fleet demand for capability and prototype development for next generation naval mining concepts. ***FY 2026 Plans:*** -Continue Target Detection Devices (Mine & Expeditionary Warfare): Continue efforts in developments in advanced sensors and algorithmic capabilities that are applicable toward existing Target Detection Devices (TDDs), development of concepts for remote controlled mines, and assessment of sea mine technologies in order to maintain a level of expertise in naval mines. Specific effort will include advanced sensing modalities for improved detection, classification, and discrimination. The objective is to achieve a miniaturized, highly capable TDD to advance legacy mine capacity. -Continue Naval Mine Subcomponents (Mine & Expeditionary Warfare): Continue efforts in alternative packaging and miniaturization of naval mine subcomponents. Specific efforts include advanced sensing, remote control and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
communications, and advanced energetics. The objective is to achieve alternative capability to incrementally advance legacy mine capacity and find new capability within legacy delivery mechanisms. ***FY 2027 Base Plans:*** -Continue Target Detection Devices (Mine & Expeditionary Warfare): Continue efforts in developments in advanced sensors and algorithmic capabilities that are applicable toward existing Target Detection Devices (TDDs), development of concepts for remote controlled mines, and assessment of sea mine technologies in order to maintain a level of expertise in naval mines. Specific effort will include advanced sensing modalities for improved detection, classification, and discrimination. The objective is to achieve a miniaturized, highly capable TDD to advance legacy mine capacity. -Continue Naval Mine Subcomponents (Mine & Expeditionary Warfare): Continue efforts in alternative packaging and miniaturization of naval mine subcomponents. Specific efforts include advanced sensing, remote control and communications, and advanced energetics. The objective is to achieve alternative capability to incrementally advance legacy mine capacity and find new capability within legacy delivery mechanisms. -Initiate investigation in novel vehicle and payload integration capabilities for survivability at the seafloor, and within a dynamic seabed environment. The objective is an enduring applied research investment in undersea lethality and enabling research thrusts as applied to the seabed environment, as well as those systems operating in the volume. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in novel vehicle and payload integration capabilities for survivability at the seafloor, and within a dynamic seabed environment.					
Title: Mine/Obstacle Detection ***Description:*** This activity focuses on applied research to enable longer detection ranges and precise detection and mine location with fewer false alarms in a variety of challenging environments. It supports Expeditionary Maneuver and Undersea Warfare related Future Naval Capabilities (FNCs). Efforts include novel sonar technologies for longer range detection and classification of mine-like targets or obstacles on or near the seafloor, magnetic gradiometer sensing, electro-optic (EO) technology for buried mine identification, and sensor integration onto Unmanned Underwater Vehicles (UUVs). EO sensor research develops algorithms to enable	15.375	9.398	13.158	0.000	13.158

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
image processing for rapid overt reconnaissance from an Unmanned Aerial Systems (UAS). Efforts include the development of processing, classification and data fusion techniques to reduce operator workload, and an expert system used to predict mine burial. Efforts also support development of MCM Mission Modules for Littoral Combat Ships. The program is strongly aligned with the Oceanographer of the Navy and the research topics addressed by this activity reflect the priorities for improved forecasts of the operational environment and the development and use of autonomous systems. These efforts support collection of environmental observations and operations and maintenance of research vessels of the U.S. Academic Research Fleet to enable science at sea. Field research within this activity that using active acoustic transmissions requires modeling of the acoustic effects of sound on marine life in order to meet Navy environmental requirements. ***FY 2026 Plans:*** -Continue autonomous vehicle development efforts for coupling autonomous vehicles with their sensor payloads. -Continue efforts to characterize flow generated by biomimetic propulsion approaches. -Continue development and demonstration of adaptive control systems for bio-inspired unmanned underwater vehicles advancing oscillating fin propulsor models and embedding these models on vehicle hardware. The objective is to increase vehicle efficiency, maneuverability and sensing effectiveness in complex environments. -Continue MCM sensor development of next-generation small, highly capable MCM sensors. Specific efforts include sensors, electronics, and computing technology. The objective is to increase deployment options for unmanned systems. -Continue Mine & Expeditionary Warfare (Target Recognition and Signal Processing) machine learning algorithm development efforts that yield principled understanding of sensor information content, are robust to challenging operating conditions and produce human-interpretable or traceable predictions. The objective is to improve operator trust in autonomous system behavior and improve automated performance. -Continue development of robotic technologies to respond to detected threats. Specific effort will include dexterity, haptics and algorithms to achieve human-like behaviors. The objective is to sense and interact with the environment and threats.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue development of a learning and planning framework, conducting field experiments that demonstrate simultaneous exploration and navigation in an unknown environment while attempting to execute a complex mission. The objective is to improve autonomous search capabilities for unmanned systems. -Continue development of cooperative autonomous underwater vehicle behaviors that adapt to dynamic and uncertain environments. -Continue advanced underwater optical imager technology focusing on laboratory measurements in various turbidity conditions and environments. The objective is to improve optical sensing performance in turbid environments. -Continue efforts that lead to increased vehicle endurance, improved data exfiltration rates, and sophisticated networking capabilities to expand reach. -Continue development of autonomous technologies to detect, classify underwater mobile threats. The objective is to improve the search/localization effectiveness and mission duration of autonomous systems. -Continue development of low Size, Weight and Power (SWaP) neuromorphic computing payloads for mine countermeasure UUVs. The objective is to improve machine learning and autonomy performance for high-data rate sensor inputs on small vehicle form-factors. -Continue Mine Countermeasures (MCM) Data (Mine & Expeditionary Warfare) efforts to aggregate, curate and interrogate real and simulated data sets for in-situ algorithm adaptation, optimization, and performance assessment. The objective is to enable unmanned systems to operate flexibly across a wide range of dynamic and unstructured environments. -Initiate applied research efforts and seabed experimentation in shallow and deep waters that yield descriptions and parameterizations of sediments applicable to modern mine warfare systems. The objective is to provide improved environmental descriptors of the seabed environment for planning and operations across all aspects of mine warfare.					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue autonomous vehicle development efforts for coupling autonomous vehicles with their sensor payloads. -Continue efforts to characterize flow generated by biomimetic propulsion approaches. -Continue development and demonstration of adaptive control systems for bio-inspired unmanned underwater vehicles advancing oscillating fin propulsor models and embedding these models on vehicle hardware. The objective is to increase vehicle efficiency, maneuverability and sensing effectiveness in complex environments. -Continue MCM sensor development of next-generation small, highly capable MCM sensors. Specific efforts include sensors, electronics, and computing technology. The objective is to increase deployment options for unmanned systems. -Continue Mine & Expeditionary Warfare (Target Recognition and Signal Processing) machine learning algorithm development efforts that yield principled understanding of sensor information content, are robust to challenging operating conditions and produce human-interpretable or traceable predictions. The objective is to improve operator trust in autonomous system behavior and improve automated performance. -Continue development of robotic technologies to respond to detected threats. Specific effort will include dexterity, haptics and algorithms to achieve human-like behaviors. The objective is to sense and interact with the environment and threats. -Continue development of a learning and planning framework, conducting field experiments that demonstrate simultaneous exploration and navigation in an unknown environment while attempting to execute a complex mission. The objective is to improve autonomous search capabilities for unmanned systems. -Continue development of cooperative autonomous underwater vehicle behaviors that adapt to dynamic and uncertain environments. -Continue advanced underwater optical imager technology focusing on laboratory measurements in various turbidity conditions and environments. The objective is to improve optical sensing performance in turbid environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue efforts that lead to increased vehicle endurance, improved data exfiltration rates, and sophisticated networking capabilities to expand reach. -Continue development of autonomous technologies to detect, classify underwater mobile threats. The objective is to improve the search/localization effectiveness and mission duration of autonomous systems. -Continue development of low Size, Weight and Power (SWaP) neuromorphic computing payloads for mine countermeasure UUVs. The objective is to improve machine learning and autonomy performance for high-data rate sensor inputs on small vehicle form-factors. -Continue Mine Countermeasures (MCM) Data (Mine & Expeditionary Warfare) efforts to aggregate, curate and interrogate real and simulated data sets for in-situ algorithm adaptation, optimization, and performance assessment. The objective is to enable unmanned systems to operate flexibly across a wide range of dynamic and unstructured environments. -Continue applied research efforts and seabed experimentation in shallow and deep waters that yield descriptions and parameterizations of sediments applicable to modern mine warfare systems. The objective is to provide improved environmental descriptors of the seabed environment for planning and operations across all aspects of mine warfare. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in autonomous vehicle development efforts for coupling autonomous vehicles with their sensor payloads.					
Title: Mine/Obstacle Neutralization ***Description:*** This activity includes applied research to support selected Expeditionary Maneuver and Undersea Warfare-related Future Naval Capabilities (FNC) for the rapid neutralization of mines, targets and obstacles, and sea mine jamming techniques to increase surface ship safe standoff from threat mines. It includes computational tools and models to assess mine and obstacle vulnerability and lethality of novel approaches for neutralization to support various far-term Surf Zone and Beach Zone mine and obstacle breaching system concepts.	0.446	1.032	0.395	0.000	0.395

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: -Continue Rapid Neutralization of Mines and Obstacles effort in rapid neutralization of mines and obstacles including development of lethality and vulnerability models, technology concept assessments, and approaches for neutralization of mines and obstacles in all water depths, the surf zone, beach and inland. The objective is to enable maneuver of joint forces from ship to inland objective. -Continue Advanced Minesweeping effort including development of compact, efficient approaches for sweeping advanced influence mines. The objective is to increase the safe standoff of various tactical platforms and surface ships. -Continue Robotics development of robotic technologies to respond to detected targets including work on dexterity, haptics, and algorithms to achieve human-like behaviors. The objective is to interact with the mine and/or obstacle to achieve target neutralization, clearance, render-safe or removal for exploitation. -Initiate Advanced Energetics effort in development of advanced formulations to harness and be tailored for the undersea environment. Initiate development in integration and tailoring of advanced energetic payloads to various autonomous systems and platforms, to include enabling capabilities like Size, Weight and Power (SWaP) requirements, and communications capabilities. The objective is an enduring applied research investment in undersea lethality and its enabling research thrusts as applied to the seabed environment, as well as those systems operating in the volume.					
FY 2027 Base Plans: -Continue Rapid Neutralization of Mines and Obstacles effort in rapid neutralization of mines and obstacles including development of lethality and vulnerability models, technology concept assessments, and approaches for neutralization of mines and obstacles in all water depths, the surf zone, beach and inland. The objective is to enable maneuver of joint forces from ship to inland objective. -Continue Advanced Minesweeping effort including development of compact, efficient approaches for sweeping advanced influence mines. The objective is to increase the safe standoff of various tactical platforms and surface ships.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue Robotics development of robotic technologies to respond to detected targets including work on dexterity, haptics, and algorithms to achieve human-like behaviors. The objective is to interact with the mine and/or obstacle to achieve target neutralization, clearance, render-safe or removal for exploitation. Continue Advanced Energetics effort in development of advanced formulations to harness and be tailored for the undersea environment. Continue development in integration and tailoring of advanced energetic payloads to various autonomous systems and platforms, to include enabling capabilities like Size, Weight and Power (SWaP) requirements, and communications capabilities. The objective is an enduring applied research investment in undersea lethality and its enabling research thrusts as applied to the seabed environment, as well as those systems operating in the volume. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to reduced research in Advanced Energetics effort in development of advanced formulations to harness and be tailored for the undersea environment.					
Title: Special Warfare/EOD ***Description:*** The goal of this effort is to develop technologies to extend stand-off of special operations and Explosive Ordnance Disposal (EOD) forces in to extend stand off and decrease time on target of special operations and EOD forces in complex environments, clandestine hydrography, mine clearance and port security missions while increasing the range and effectiveness of divers. Advanced technologies are needed to gain access to areas contaminated by area-denial sensors and/or booby traps. Developed technologies will transition to the Naval EOD program, the Naval Special Warfare program, the Joint Service EOD Program, or the DOW Technical Response Group. This activity includes applied research in sensor technology for Naval Special Warfare (NSW) and EOD autonomous and handheld sonar systems to increase detection range and accuracy in harsh environments. Other efforts include such mission support technology improvements as communications, navigation, and manned-unmanned teaming (MUMT) research to support shared missions between UUVs and human divers. ***FY 2026 Plans:***	10.424	7.419	9.241	0.000	9.241

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue Advanced Robotic Techniques efforts in advanced robotic technologies including development of human- like manipulators and haptics. The objective is to provide access to underwater, buried and surface munitions and enable standoff operations with high precision. -Continue sensor-tailored development and integration of air, surface and subsurface platforms to conduct operations in the littorals to improve diver situational awareness, mobility and safety, address drag reduction, diver propulsion, communications, navigation, thermal envelope, life support and contamination protection. -Continue Ordnance Detection efforts for sensors to detect munitions and improvised explosive devices. Specific efforts include compact electromagnetic, optical and next generation magnetometer sensors which are hand-held or robot deployable. The objective is to improve performance by achieving a lower false alarm rates and higher probability of detection. -Continue Sensor Techniques effort to develop compact sensor technologies to diagnose explosive threats and unexploded ordnance including the development of hand-held or robot deployable sensor technologies. The objective is to determine the status of explosive threats and unexploded ordnance. -Continue Neutralization Explosive Threats effort to develop technologies to enable render-safe or neutralization of explosive threats and unexploded ordnance. The objective is to enable precision render-safe or neutralization operations at standoff distances. -Continue Unmanned Systems Situational Awareness development of onboard processing in unmanned systems to enable environmental situational awareness (SA) in the littorals. -Continue Rapid Operational Clearance efforts to develop technologies to rapidly clear operational areas of munitions. The objective is to decrease the amount of time needed for services to clear munitions and conduct clearance operations at standoff.					
FY 2027 Base Plans: -Continue Advanced Robotic Techniques efforts in advanced robotic technologies including development of human- like manipulators and haptics. The objective is to provide access to underwater, buried and surface munitions and enable standoff operations with high precision.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Continue sensor-tailored development and integration of air, surface and subsurface platforms to conduct operations in the littorals to improve diver situational awareness, mobility and safety, address drag reduction, diver propulsion, communications, navigation, thermal envelope, life support and contamination protection. -Continue Unmanned Systems Situational Awareness development of onboard processing in unmanned systems to enable environmental situational awareness (SA) in the littorals. - Initiate Artificial Intelligence & Machine Learning for detection, location and identification of Unexploded Ordnance and Unknown targets in complex mission areas. This development, coupled with advanced sensing and autonomy will shorten the clearance of unexploded ordnance and increase warfighter effectiveness through increased standoff and reduced time on target. -Initiate studies and material science to address defeat of multiple downed drones to support improved EOD warfighter effectiveness. This will support continuance of Rapid Operational Clearance efforts to develop technologies to rapidly clear operational areas of munitions, including downed drones. The objective is to decrease the amount of time needed for services to clear munitions and conduct clearance operations at standoff. Continue Ordnance Detection efforts for sensors to detect munitions and improvised explosive devices. Specific efforts include compact electromagnetic, optical and next generation magnetometer sensors which are hand-held or robot deployable. The objective is to improve performance by achieving a lower false alarm rates and higher probability of detection. -Continue Sensor Techniques effort to develop compact sensor technologies to diagnose explosive threats and unexploded ordnance including the development of hand-held or robot deployable sensor technologies. The objective is to determine the status of explosive threats and unexploded ordnance. -Continue Neutralization Explosive Threats effort to develop technologies to enable render-safe, disruption or neutralization of explosive threats and unexploded ordnance. The objective is to enable precision render-safe or neutralization operations at standoff distances.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	**Project (Number/Name)** 0000 / *Mine and Expeditionary Warfare Applied Research*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to increased research in Artificial Intelligence & Machine Learning for detection, location and identification of Unexploded Ordnance and Unknown targets in complex mission areas and studies and material science to address defeat of multiple downed drones to support improved EOD warfighter effectiveness.					
Accomplishments/Planned Programs Subtotals	28.329	18.081	24.634	0.000	24.634

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602782N / *Mine and Expeditionary Warfare Applied Research*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.965	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.965

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Geophysical sensing & characterization of mine-hun	0.965	0.000
FY 2025 Accomplishments: Characterize/Optimize Magnetic Self-Noise: - Measure magnetic platform self-noise signature using USM's magnetically shielded zero gauss test chamber. - Optimize sensor configuration and placement for scalar and vector magnetic sensors. Advance Magnetic Sensing Capabilities: - Generate data to support magnetic modeling and simulation tools. - Create motion compensation and noise reduction methods adaptable to other UUV platforms		
FY 2026 Plans: N/A		
Congressional Adds Subtotals	0.965	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy												Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*					R-1 Program Element (Number/Name) PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	140.590	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	140.590
3456: *Full Spectrum Undersea Warfare*	0.000	40.788	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	40.788
3462: *DEALRS*	0.000	6.633	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.633
3463: *MATes*	0.000	9.603	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.603
3506: *Compact Agile Interceptors*	0.000	1.940	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.940
3507: *Chimera*	0.000	33.868	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.868
3508: *Curious Orion*	0.000	1.746	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.746
5891: *Naval S&T Ops Analysis, Supp & Experimentation Act*	0.000	1.239	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.239
5894: *Direct-X*	0.000	1.940	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.940
5896: *Echidna*	0.000	8.355	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.355
5899: *Precision Fire Control*	0.000	13.619	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.619
5901: *STARDANCAR-M*	0.000	1.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.000
5902: *TALISMAN*	0.000	2.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.000
9999: *Congressional Adds*	0.000	17.859	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.859

Note

Innovative Naval Prototypes (INP) Applied Research (6.2) PE 0602792N has been consolidated into the Future Naval Capabilities Applied Research (6.2) PE 0602750N beginning in FY2026 in alignment with the DoW Implementation Plan from the Commission on PPBE Final Report for PE/BLI Consolidation.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) portfolio includes efforts that solve problems, respond to mission requirements, and perform exploratory research for new and breakthrough capabilities, which will define the future of U.S. Naval forces. Larger in scope, scale, and risk Innovative Naval Prototypes (INP) are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs typically have long durations with no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require both the Applied Research, detailed in this PE; and Advanced Technology Development (ATD) funding, detailed in PE 0603801N. Developing INPs requires a systematic expansion and application of knowledge to develop useful materials, devices, and systems oriented toward the design and development of prototypes applicable to specific mission area requirements. The

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*

efforts funded within this PE translate promising basic research into solutions for broadly defined military needs. These efforts include developing breadboard hardware and algorithms that establish the initial feasibility and practicality of proposed solutions to technological challenges, such as concept exploration efforts, studies, investigations, and non-system specific technology efforts. Applied Research INPs do not develop hardware for service use; rather they provide feeder technology that can be demonstrated in prototypes in the ATD portion of the INP program.

Information security concerns preclude full disclosure of project efforts, research activities, and technology development plans within this exhibit. Detailed information will be provided to the Congressional oversight committees.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	145.863	0.000	0.000	-	0.000
Current President's Budget	140.590	0.000	0.000	-	0.000
Total Adjustments	-5.273	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.949	0.000			
• SBIR/STTR Transfer	-3.324	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *ATRT enterprise*	17.859	0.000
Congressional Add Subtotals for Project: 9999	17.859	0.000
Congressional Add Totals for all Projects	17.859	0.000

Change Summary Explanation

Funding: No significant change

Technical: No significant change

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602792N *I Innovative Naval Prototypes (INP) Applied Res*

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3456 / *Full Spectrum Undersea Warfare*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3456: *Full Spectrum Undersea Warfare*	0.000	40.788	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	40.788

A. Mission Description and Budget Item Justification

The Full Spectrum Undersea Warfare (FSUSW) Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. FSUSW focuses on Theatre Undersea Warfare (TUSW), Joint Targeting and Strike, and Subsea and Seabed Warfare (SSW). There are five thrust areas of FSUSW that are key to enabling Chief of Naval Operations Guidance (CNOG), Distributed Maritime Operations (DMO), and the Commandant's Stand in Force with manned and unmanned warfighting capability. These thrust areas were specifically chosen in direct collaboration with STRATCOM, INDO-PACOM, Fleet and Undersea Warfare Commanders and validated with regular Flag officer engagements. These applied research efforts will enable future undersea weapon systems (e.g., Maritime Strike Tomahawk and ADCAP variants), COCOM campaigns, and operational plans. FSUSW thrust areas include 1) Undersea effectors, 2) Integrated expeditionary subsea system of systems, 3) Multi-Vehicle Torpedo Tube Development System (MVTTDS), 4) Undersea UAV for Over-The-Horizon (OTH) effects and 5) Undersea Launched Devices to enable Commanding Officers and Regional Combatant Commander effects. The five thrust areas are technically and operationally interconnected.

The efforts described in this Project address the Applied Research associated with the Innovative Naval Prototypes (INP) Program. These investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature, as they would dramatically change the way naval forces fight. Due to high technical risk, INPs typically have long duration but have no more than three years between decision points. They mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a
TRL of 6. As such, INPs require both Budget Activity (BA) 2 and BA3 funding. The BA3 INP funds are specified in a separate Program Element (PE), 0603801N Innovative Naval Prototypes (INP) Adv Tec Dev in the Undersea Warfare Efforts, Project 3458.

Information security concerns preclude fully detailed descriptions of project efforts, research activities, and technology development plans. Specific information on each project and activity will be provided separately to the Congressional oversight committees.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Undersea Warfare Efforts	40.788	0.000	0.000	0.000	0.000
Description: The FSUSW Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. FSUSW will address three thrusts identified in the Undersea Warfare Development Command's document, "Full Spectrum Undersea Warfare Concept of Operations (CONOPS)". These thrusts are: advanced offensive missions for submarines, subsea and seabed warfare, and distributed undersea warfare. Distributed undersea warfare technology will enable full participation					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3456 / *Full Spectrum Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
of all undersea warfare assets in the Navy's Distributed Maritime Operations concept. FSUSW missions this Project addresses include Anti-Submarine Warfare (ASW), Anti Surface Warfare, Strike, Intelligence, Surveillance, and Reconnaissance, Mine Warfare, and Subsea and Seabed Warfare (SSW). The FSUSW Project includes the Affordable Mobile ASW Surveillance System (AMASS) research and will leverage technology developed in the separate PE 06022792N, Project Unit 3450, AMOS. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	40.788	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3462 / *DEALRS*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3462: *DEALRS*	0.000	6.633	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.633

Note

This activity is being broken out from PE 0603801N Project Unit 3459 Super Swarm to provide increased visibility and focus on this technical challenge area at the BA2 level.

A. Mission Description and Budget Item Justification

Adversary Anti-Access and Area Denial (A2/AD) capabilities continue to improve but remain focused on targeting specific US and joint force capabilities. The Deployment and Employment of Autonomous Long Range Systems (DEALRS) project will develop technologies that sidestep, operate below the threshold, or deplete adversary A2/AD capabilities. DEALRS will specifically develop technologies to enable low-cost unmanned systems that can maneuver across theater-level ranges to penetrate, operate within, and launch strikes from within adversary A2/AD system coverage. This project will develop technologies to increase the range and endurance of autonomous systems while maintaining tactically relevant speeds, loiter times, and signatures with low cost. It will also address technologies that enable the marsupial launch of terminal engagement autonomous unmanned systems across all domains from larger and/or longer-range host systems that bring them to the launch area and the associated technologies needed to ensure roboticized and autonomous startup and launch of the marsupial systems without human intervention. The Activity identified in Project Unit 3462 DEALRS specifically addresses Applied Research in support of the INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: DEALRS	6.633	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	6.633	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0603801N/3462: *DEALRS*	5.940	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.674

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3462 / *DEALRS*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3463 / *MATes*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3463: *MATes*	0.000	9.603	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.603

Note

This activity is being broken out from PE 0603801N Project Unit 3459 Super Swarm to provide increased visibility and focus on this technical challenge area at the BA2 level.

A. Mission Description and Budget Item Justification

Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The activity identified in Project Unit 3463 MATes specifically addresses Applied Research in support of the MATes effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Manned and Autonomous Teams	9.603	0.000	0.000	0.000	0.000
Description: Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3463 / *MATes*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
activity identified in Project Unit 3463 MATes specifically addresses Applied Research in support of the MATes effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	9.603	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0603801N/3463: *MATes*	4.950	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.727

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 3506 / *Compact Agile Interceptors*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3506: *Compact Agile Interceptors*	0.000	1.940	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.940

A. Mission Description and Budget Item Justification

The US Navy lacks both in capability and capacity interceptors that have the ability to defeat complex raids of hypersonic missiles, cruise missiles and surface vessels. The Compact Agile Interceptor INP will use small diameter missiles to achieve a higher packing efficiency. Disruptive seeker technology, which weighs mere ounces will replace wasted pounds of payload weight and allow for higher speed missile interceptors. The seedling will evaluate multiple propulsion technologies including solid fuel ramjets, highly loaded grain propellants, and active throttling of solid rockets. The missiles airframe may be staged to enable the interceptor(s) the greatest agility to overmatch the threat. Multiple warhead technologies will be evaluated including reactive materials, kinetic warheads, and tailorable fragment warheads. The Activity identified in Project Unit 3506 specifically addresses Applied Research in support of the Compact Agile Interceptors INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Compact Agile Interceptors	1.940	0.000	0.000	0.000	0.000
Description: The US Navy lacks both in capability and capacity interceptors that have the ability to defeat complex raids of hypersonic missiles, cruise missiles and surface vessels. The Compact Agile Interceptor INP will use small diameter missiles to achieve a higher packing efficiency. Disruptive seeker technology, which weighs mere ounces will replace wasted pounds of payload weight and allow for higher speed missile interceptors. The seedling will evaluate multiple propulsion technologies including solid fuel ramjets, highly loaded grain propellants, and active throttling of solid rockets. The missiles airframe may be staged to enable the interceptor(s) the greatest agility to overmatch the threat. Multiple warhead technologies will be evaluated including reactive materials, kinetic warheads, and tailorable fragment warheads. The Activity identified in Project Unit 3506 specifically addresses Applied Research in support of the Compact Agile Interceptors INP effort.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 3506 / *Compact Agile Interceptors*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	1.940	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy												Date: April 2026
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3507 / *Chimera*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
3507: *Chimera*	0.000	33.868	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.868

A. Mission Description and Budget Item Justification

Details at a higher classification

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Chimera	33.868	0.000	0.000	0.000	0.000
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	33.868	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319 / 2					R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*				Project (Number/Name) 3508 / *Curious Orion*			
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
3508: *Curious Orion*	0.000	1.746	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.746

A. Mission Description and Budget Item Justification

The USN lacks a breadth of tools to find fix and finish high end maritime threats across specific environments and conditions. Curious Orion will develop a unique capability to exploit specific phenomenology produced by submerged bodies in operationally relevant areas that are of specific interest to the U.S. Navy. The Activity identified in Project Unit 3508 specifically addresses Applied Research in support of the Curious Orion INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Curious Orion ***Description:*** The USN lacks a breadth of tools to find fix and finish high end maritime threats across specific environments and conditions. Curious Orion will develop a unique capability to exploit specific phenomenology produced by submerged bodies in operationally relevant areas that are of specific interest to the U.S. Navy. The Activity identified in Project Unit 3508 specifically addresses Applied Research in support of the Curious Orion INP effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A	1.746	0.000	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	1.746	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5891 / *Naval S&T Ops Analysis, Supp & Experimentation Act*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5891: *Naval S&T Ops Analysis, Supp & Experimentation Act*	0.000	1.239	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.239

A. Mission Description and Budget Item Justification

Operational Analysis, Support and Experimentation Activity was established to broaden the spectrum of promising applied research efforts investigated within this Project and to provide additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level.

The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) Operational Analysis, Support and Experimentation Activity efforts that are used to further explore the development of future INP topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP topics for future investment consideration. The use of Operational Analysis, Support and Experimentation Activity funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP topic for consideration in a more time-efficient and/or effective manner.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: INP Operational Analysis, Support and Experimentation	1.239	0.000	0.000	0.000	0.000
Description: Operational Analysis, Support and Experimentation was established to broaden the spectrum of promising applied research efforts investigated within this Project and to provide additional acquisition oversight, fiscal clarity, and adherence to financial management practices at the Project level. The efforts described in this Project address the Applied Research associated with Innovative Naval Prototype (INP) Operational Analysis, Support and Experimentation efforts that are used to further explore the development of future INP topics and proposals. These efforts evaluate, study/analyze and/or perform any basic applied research-focused investigative experimentation activities which will support the identification of potential INP topics for future investment consideration. The use of Operational Analysis, Support and Experimentation funds can help accelerate and/or create a flexible response to emerging requirements or threats by identifying a potential INP topic for consideration in a more time-efficient and/or effective manner. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5891 / *Naval S&T Ops Analysis, Supp & Experimentation Act*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.239	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5894 / *Direct-X*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5894: *Direct-X*	0.000	1.940	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.940

A. Mission Description and Budget Item Justification

The Direct-X effort will develop space based ISRT with direct downlink into kill chains supporting all domain effects in a Distributed Maritime Operations construct. The focus is on advances in the following lines of effort:
P1 - Orchestration, tasking and resilient C3
P2 - Threat prioritized low cost on orbit payloads
P3 - On orbit processing and analyitic AI/ML
P4 - Direct-to-shooter kill chains
P5 - On orbit effects

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Direct-X INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Direct-X	1.940	0.000	0.000	0.000	0.000
Description: The Direct-X effort will develop space based ISRT with direct downlink into kill chains supporting all domain effects in a Distributed Maritime Operations construct. The focus is on advances in the following lines of effort: P1 - Orchestration, tasking and resilient C3 P2 - Threat prioritized low cost on orbit payloads P3 - On orbit processing and analyitic AI/ML P4 - Direct-to-shooter kill chains P5 - On orbit effects The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5894 / *Direct-X*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations. The Activity identified in this Project Unit specifically addresses Applied Research in support of the Direct-X INP effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	1.940	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5896 / *Echidna*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5896: *Echidna*	0.000	8.355	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	8.355

A. Mission Description and Budget Item Justification

The Echidna effort will develop additive capability and additive capacity which is classified. It will explore new mine development, to include improved sensing for a highly complex environment and target, improved lethality, endurance and power technologies, cost-effective additive manufacturing subcomponent technologies, and flexible, platform-agnostic engineering design (to include safe & arming device) to allow for novel and adaptable concepts of employment (CONEMP)

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the Echidna INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Echidna	8.355	0.000	0.000	0.000	0.000
Description: The Echidna effort will develop additive capability and additive capacity which is classified. It will explore new mine development, to include improved sensing for a highly complex environment and target, improved lethality, endurance and power technologies, cost-effective additive manufacturing subcomponent technologies, and flexible, platform-agnostic engineering design (to include safe & arming device) to allow for novel and adaptable concepts of employment (CONEMP) The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5896 / *Echidna*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The Activity identified in this Project Unit specifically addresses Applied Research in support of the Echidna INP effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	8.355	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5899 / *Precision Fire Control*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5899: *Precision Fire Control*	0.000	13.619	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	13.619

A. Mission Description and Budget Item Justification

The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the PFC INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Precision Fire Control	13.619	0.000	0.000	0.000	0.000
Description: The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components. The Activity identified in this Project Unit specifically addresses Applied Research in support of the PFC INP effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	13.619	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5899 / *Precision Fire Control*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0603801N/5899: *Precision Fire Control*	10.352	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	18.765

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5901 / *STARDANCAR-M*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5901: *STARDANCAR-M*	0.000	1.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	1.000

A. Mission Description and Budget Item Justification

The Small Turbofan Augmentor with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) effort will add a Rotating Detonation Augmentor (RDA) to small engines, decreasing the burning length:
- Autonomous Collaborative Aircraft (ACA) with RDA will keep up with tactical vehicles
- Missiles with RDA will achieve higher speeds
- Subsonic missiles will have increased evasion capabilities and terminal velocity

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the STARDANCAR-M INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: STARDANCAR-M	1.000	0.000	0.000	0.000	0.000
Description: The Small Turbofan Augmentor with Rotating Detonation for Autonomous Collaborative Aircraft and Missiles (STARDANCAR-M) effort will add a Rotating Detonation Augmentor (RDA) to small engines, decreasing the burning length: - Autonomous Collaborative Aircraft (ACA) with RDA will keep up with tactical vehicles - Missiles with RDA will achieve higher speeds - Subsonic missiles will have increased evasion capabilities and terminal velocity					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5901 / *STARDANCAR-M*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	1.000	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 5902 / *TALISMAN*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5902: *TALISMAN*	0.000	2.000	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.000

A. Mission Description and Budget Item Justification

The Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers And Networking (TALISMAN) effort distributes sensors across a network of many small, low-cost, high-endurance platforms that provide resilience in a contested environment and use autonomy to enable agile adaptability to threats and changing mission objectives. Innovative airframe designs and controls enable small deck ships to organically deploy TALISMAN sensing & EW networks and engage long-range fires with weapons quality tracks out to 450 NM from the ship. TALISMAN's size allows the ship to carry enough platforms to maintain 24hr coverage.

The efforts described in this Project address the Applied Research associated with concept of a "Seedling". These "Seedling" efforts are short duration applied research efforts to explore technology concepts which have the potential to provide revolutionary and/or disruptive warfighting capability. As a "Seedling" concept matures, a determination is made whether or not a continuing INP effort is warranted or appropriate. "Seedlings" are typically one to two year efforts and use applied research to analyze the feasibility of technology and subsystems to assess if the technologies can be proposed as an INP. They will research lower TRL technologies to explore technology concepts and lay preliminary groundwork for an INP proposal to continue technology development and full-scale technology/operational demonstrations.

The Activity identified in this Project Unit specifically addresses Applied Research in support of the TALISMAN INP effort.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: TALISMAN	2.000	0.000	0.000	0.000	0.000
Description: The Tactical Autonomous Layered Infrastructure for Spectrum Maneuvers And Networking (TALISMAN) effort distributes sensors across a network of many small, low-cost, high-endurance platforms that provide resilience in a contested environment and use autonomy to enable agile adaptability to threats and changing mission objectives. Innovative airframe designs and controls enable small deck ships to organically deploy TALISMAN sensing & EW networks and engage long-range fires with weapons quality tracks out to 450 NM from the ship. TALISMAN's size allows the ship to carry enough platforms to maintain 24hr coverage.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	**Project (Number/Name)** 5902 / *TALISMAN*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	2.000	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602792N / *Innovative Naval Prototypes (INP) Applied Res*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	17.859	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.859

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: ATRT enterprise	17.859	0.000
FY 2025 Accomplishments: Conduct research for ATRT enterprise by developing Machine Learning algorithms & techniques for ATRT.		
FY 2026 Plans: N/A		
Congressional Adds Subtotals	17.859	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 2: *Applied Research*	**R-1 Program Element (Number/Name)** PE 0602861N *I Science & Tech Management - ONR Field Acts*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	100.330	81.423	74.378	-	74.378	79.060	74.214	76.684	77.974	Continuing	Continuing
0000: *Science & Tech Management - ONR Field Acts*	0.000	92.289	72.085	62.207	-	62.207	63.360	65.225	67.652	68.879	Continuing	Continuing
0824: *Science & Technology Managment*	0.000	8.041	9.338	12.171	-	12.171	15.700	8.989	9.032	9.095	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element (PE) provides funding for the essential corporate expenses that form the foundational support structure for the Office of Naval Research (ONR). These costs, the vast majority of which are fixed, include salaries for the world-class scientists and engineers who lead our S&T programs, as well as critical operational expenses such as Information Technology (IT), cyber security efforts, Defense Finance and Accounting Service (DFAS) billings, and day-to-day logistical support. This investment is not merely overhead but a direct enabler of ONR's core mission to discover, develop, and transition innovative science and technology. This foundational support ensures that ONR can continue to provide the U.S. Navy and Marine Corps with the decisive technological advantage required to preserve national security.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	90.939	81.423	88.575	-	88.575
Current President's Budget	100.330	81.423	74.378	-	74.378
Total Adjustments	9.391	0.000	-14.197	-	-14.197
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	9.640	0.000			
• SBIR/STTR Transfer	-0.249	0.000			
• Program Adjustments	0.000	0.000	-14.197	-	-14.197
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Change Summary Explanation

Funding: The FY 2027 budget request was reduced by $14.197M due to OUSW Directed CIVPER Savings.

Technical: No significant change.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602861N / *Science & Tech Management - ONR Field Acts*	Project (Number/Name) 0000 / *Science & Tech Management - ONR Field Acts*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0000: *Science & Tech Management - ONR Field Acts*	0.000	92.289	72.085	62.207	-	62.207	63.360	65.225	67.652	68.879	Continuing	Continuing

Note

N/A

A. Mission Description and Budget Item Justification

This project supports ONR leadership, management and direction for the Naval S&T program. This project funds ONR HQ Non-Management Headquarters Activities (Non-MHA) salaries, communications, and other fixed costs. ONR sponsors scientific advances, which lead to Future Naval Capabilities (FNCs), supporting the Fleet's ability to operate from a position of technological superiority. Functions performed include (1) scientific and technical direction of the nationwide 6.1 basic research program with colleges, universities, non-profit organizations and Naval Laboratories and Warfare Centers; (2) scientific and technical direction of the 6.2 applied research program through the Naval R&D laboratories and Warfare Centers and industry; (3) scientific and technical direction of the Naval 6.3 advanced technology development program through the Navy's R&D laboratories, Warfare Centers and industry; (4) management, resource formulation, program assessment, and contract negotiation/administration of the Navy basic research, applied research and advanced technology development program; and (5) coordination of the Navy's Technology Base program within the context of total DoW/Government (e.g., National Science Foundation, National Academy of Sciences) R&D initiatives in order to maximize scientific advances. This project also supports ONR Non-MHA management and direction for the following Navy-wide programs: Small Business Innovation Research, Naval Research Advisory Committee, Navy Patent Program, Historically Black Colleges and Universities/Minority Institutions Program, Navy Manufacturing Technology Program and the Ballistic Missile Submarine Nuclear (SSBN) Security Technology Program.

Additionally, this project funds ONR field salaries, communications, and other fixed costs.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: (U) Science & Tech Management - ONR Field Acts	92.289	72.085	62.207	0.000	62.207
Description: This Project provides funds for Non-MHA Labor costs associated with executing ONR's mission to discover, develop, and transition innovative science and technology (S&T) to meet current and future needs of naval forces. The funds in this project pay the salaries of Scientific and Engineering and corporate business personnel who direct the execution of the Navy's basic research, applied research, and advanced technology development programs at the nation's universities/colleges, Navy laboratories, Warfare Centers, and private industry.					
FY 2026 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602861N / *Science & Tech Management - ONR Field Acts*	**Project (Number/Name)** 0000 / *Science & Tech Management - ONR Field Acts*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
This project provides for all labor costs of ONR Headquarters in support of the Navy S&T program. The funds in this project pay the salaries of Scientific and Engineering and corporate business personnel who direct the execution of the Navy's basic research, applied research, and advanced technology development programs at the nation's universities/colleges, Navy laboratories, Warfare Centers, and private industry. This project provides for all basic labor costs of ONR activities in support of the entire Navy S&T program. ***FY 2027 Base Plans:*** This project provides for all labor costs of ONR Headquarters in support of the Navy S&T program. The funds in this project pay the salaries of Scientific and Engineering and corporate business personnel who direct the execution of the Navy's basic research, applied research, and advanced technology development programs at the nation's universities/colleges, Navy laboratories, Warfare Centers, and private industry. This project provides for all basic labor costs of ONR activities in support of the entire Navy S&T program. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The FY26 to FY27 reduction is due to OUSW Directed CIVPER Saving.					
Accomplishments/Planned Programs Subtotals	92.289	72.085	62.207	0.000	62.207

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 2	R-1 Program Element (Number/Name) PE 0602861N / *Science & Tech Managem ent - ONR Field Acts*	Project (Number/Name) 0824 / *Science & Technology Managment*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
0824: *Science & Technology Managment*	0.000	8.041	9.338	12.171	-	12.171	15.700	8.989	9.032	9.095	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Project provides funds for non-Labor costs associated with executing ONR's mission to discover, develop, and transition innovative science and technology (S&T) to meet current and future needs of naval forces. Majority of funds in this project are fixed costs, such as communications, training, and other support functions.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Science and Technology Management	5.131	5.370	5.354	0.000	5.354
Description: This Project provides funding for the essential non-labor costs that form the foundational support structure for the Office of Naval Research (ONR) to execute its mission of discovering, developing, and transitioning innovative science and technology (S&T) to naval forces. While categorized as non-labor, these are primarily fixed costs crucial for mission success, directly enabling vital functions such as global communications for international collaboration, continuous training to keep our scientific workforce at the cutting edge, and other critical support like IT infrastructure and program management. This investment is not merely overhead but a direct enabler of the research and development enterprise that ensures the U.S. Navy and Marine Corps maintain their decisive technological advantage, ultimately preserving national security. ***FY 2026 Plans:*** - Continue education of world-class workforce. ONR employs top, world-class scientists and engineers. To maintain this level of expertise, ongoing training in the latest scientific methodologies, technological advancements, and project management techniques is essential. - Continue Global Collaborations. Global presence allows ONR to identify and foster groundbreaking research from international partners. Effective communication systems are the lifeblood of this international collaboration, enabling real-time data sharing, video conferencing, and secure correspondence with researchers and institutions worldwide. - Continue Information Dissemination: ONR is responsible for disseminating research findings, funding opportunities, and technological updates to a vast network of stakeholders, including the Naval Research and Development Establishment (NRDE), academic partners, and industry. This requires a sophisticated and reliable communications infrastructure to manage everything from broad agency announcements to secure data transfer.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602861N / *Science & Tech Management - ONR Field Acts*	**Project (Number/Name)** 0824 / *Science & Technology Managment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue Network-Centric Operations: The modern naval force operates in a network-centric environment. ONR's research in areas like the "Fleet Tactical Grid" aims to ensure that every warfighter has access to the information they need to make critical decisions. This requires a robust internal and external communications network to support the development and testing of these advanced systems. - Continue Facilities and Infrastructure: ONR's headquarters in Arlington, Virginia, and its global offices require ongoing maintenance and support to provide a secure and efficient work environment. - Continue Information Technology (IT) Support: The complex and data-intensive nature of ONR's work demands a high-performance IT infrastructure with robust cybersecurity protections. This includes everything from data storage and processing to software licensing and technical support.					
FY 2027 Base Plans: - Continue education of world-class workforce. ONR employs top, world-class scientists and engineers. To maintain this level of expertise, ongoing training in the latest scientific methodologies, technological advancements, and project management techniques is essential. - Continue Global Collaborations. Global presence allows ONR to identify and foster groundbreaking research from international partners. Effective communication systems are the lifeblood of this international collaboration, enabling real-time data sharing, video conferencing, and secure correspondence with researchers and institutions worldwide. - Continue Information Dissemination: ONR is responsible for disseminating research findings, funding opportunities, and technological updates to a vast network of stakeholders, including the Naval Research and Development Establishment (NRDE), academic partners, and industry. This requires a sophisticated and reliable communications infrastructure to manage everything from broad agency announcements to secure data transfer. - Continue Network-Centric Operations: The modern naval force operates in a network-centric environment. ONR's research in areas like the "Fleet Tactical Grid" aims to ensure that every warfighter has access to the information they need to make critical decisions. This requires a robust internal and external communications network to support the development and testing of these advanced systems.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602861N / *Science & Tech Managem ent - ONR Field Acts*	**Project (Number/Name)** 0824 / *Science & Technology Managment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue Facilities and Infrastructure: ONR's headquarters in Arlington, Virginia, and its global offices require ongoing maintenance and support to provide a secure and efficient work environment. - Continue Information Technology (IT) Support: The complex and data-intensive nature of ONR's work demands a high-performance IT infrastructure with robust cybersecurity protections. This includes everything from data storage and processing to software licensing and technical support. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** No significant change.					
Title: Research Technology Protection (RTP) Data Initiatives ***FY 2026 Plans:*** - Continue applied science exploring the application of risk management models to research and technology protection. This initiative will develop qualitative and quantitative data analysis methods to conduct comparative analysis in areas of critical and emerging technologies of interest to the U.S. Navy. Additionally, this initiative seeks to develop novel "due diligence" processes to assure integrity of research and mitigate foreign intelligence exploitation of research and technology development. Due diligence processes will ensure compliance with federally mandated information disclosures, as well as assessing counterintelligence indicators contained in publicly available information to include academic publications, business intelligence resources, other open-source publications. Both facets of this initiative are intended to be standardized and broadly incorporated into a quantitative model of risk tolerance and avoidance. ***FY 2027 Base Plans:*** - Continue applied science exploring the application of risk management models to research and technology protection. This initiative will develop qualitative and quantitative data analysis methods to conduct comparative analysis in areas of critical and emerging technologies of interest to the U.S. Navy. Additionally, this initiative seeks to develop novel "due diligence" processes to assure integrity of research and mitigate foreign intelligence exploitation of research and technology development. Due diligence processes will ensure compliance with federally mandated information disclosures, as well as assessing counterintelligence indicators contained in publicly available information to include academic publications, business intelligence resources, other open-source publications. Both facets of this initiative are intended to be standardized and broadly incorporated into a quantitative model of risk tolerance and avoidance.	1.914	1.984	6.817	0.000	6.817

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602861N / *Science & Tech Management - ONR Field Acts*	**Project (Number/Name)** 0824 / *Science & Technology Managment*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Efforts in FY27 will enable critical expansion of these efforts, specifically allowing for increased data acquisition, expanded personnel with specialized expertise, and development of advanced AI-driven analytical tools. This investment is essential to proactively identify and mitigate emerging threats to Navy research and technology, ensuring continued U.S. naval superiority. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 reflects the Research Technology Protection (RTP) Data Initiatives, which The FY2025 National Defense Authorization Act (NDAA) includes provisions for research technology protection, including requiring the Secretary of Defense to develop and incorporate technology protection features in designated systems, and mandating cost-sharing for contracts related to exportability of those systems.					
Title: ONR Cost Estimation Team ***FY 2026 Plans:*** - Completion of cost estimating group due to higher demands within S&T portfolio. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 reflects the completion of the program.	0.996	1.984	0.000	0.000	0.000
Accomplishments/Planned Programs Subtotals	8.041	9.338	12.171	0.000	12.171

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 2	**R-1 Program Element (Number/Name)** PE 0602861N / *Science & Tech Management - ONR Field Acts*	**Project (Number/Name)** 0824 / *Science & Technology Managment*

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603123N *I Force Protection Advanced Technology*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	54.667	113.756	50.869	-	50.869	66.129	59.510	44.109	44.143	Continuing	Continuing
2912: *Force Protection Advanced Technology*	0.000	44.274	43.527	50.869	-	50.869	66.129	59.510	44.109	44.143	Continuing	Continuing
3270: *Sec. 2912 Operational Energy Savings*	0.000	2.670	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.670
9999: *Congressional Adds*	0.000	7.723	70.229	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	77.952

A. Mission Description and Budget Item Justification

This PE addresses advanced technology development associated with providing the capability of Platform and Force Protection for the U.S. Navy. This program supports the development of technologies associated with mission capable, persistent and survivable Naval platforms (surface, subsurface, terrestrial and air) in the areas of Platform Design & Engineering, Power, Energy & Propulsion, and Materials. The program develops technologies for enhanced capability of Naval aviation aircraft platforms in terms of mission effectiveness, platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. It also develops new Naval air vehicle concepts and high impact, scalable Naval air vehicle technologies. The program also develops advanced technologies, critical to protecting naval installations, to provide seamless full spectrum protection against asymmetric attack by improving the ability to: detect and identify developing and immediate threats; shape our responses through improved situational awareness and decision making; shield personnel, mission critical facilities, infrastructure, and operating fleet assets; maintain essential functions; and sustain and restore critical services in the aftermath of an incident.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603123N *I Force Protection Advanced Technology*

The FY 2026 spend plan amount for Research, Development, Test and Evaluation, Navy includes $113,756 thousand of discretionary and $21,800 thousand of mandatory (reconciliation) for a total of $135,556.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	52.657	43.527	31.522	-	31.522
Current President's Budget	54.667	113.756	50.869	-	50.869
Total Adjustments	2.010	70.229	19.347	-	19.347
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.521			
• Congressional Rescissions	-	-			
• Congressional Adds	-	72.750			
• Congressional Directed Transfers	-	-			
• Reprogrammings	2.484	0.000			
• SBIR/STTR Transfer	-0.474	0.000			
• Program Adjustments	0.000	0.000	19.347	-	19.347
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Zero Trust Architectures for Naval Power Systems*	0.000	10.136
Congressional Add: *Next Generation Electrification*	0.000	26.065
Congressional Add: *PFAS-Free, Fire-Resisteant, Self-Extinguishing Coa*	0.000	19.307
Congressional Add: *High Performance Li-Ion Batteries*	0.000	4.827
Congressional Add: *Next Generation Barrier*	0.000	2.896
Congressional Add: *University-Based Advanced Materials And Manufactur*	0.000	3.137
Congressional Add: *Commercial UUVs Assembled at the Point of Deployme*	0.000	3.861
Congressional Add: *Self-extinguishing and thermal isolating materials*	4.827	0.000
Congressional Add: *Deployable additive manufacturing of composite UUVs*	2.896	0.000
Congressional Add Subtotals for Project: 9999	7.723	70.229
Congressional Add Totals for all Projects	7.723	70.229

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603123N *I Force Protection Advanced Technology*

Change Summary Explanation

Funding: The FY 2027 request increase of $19.347M supports increased investments towards battery and cruise missile development with strategic investments being made to advance kinetic weapon systems and sub-system science and technologies to enhance performance and capabilities for current and future offensive and defensive kinetic weapons.

Schedule: No significant change

Schedule: not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603123N / *Force Protection Advanced Technology*	Project (Number/Name) 2912 / *Force Protection Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2912: *Force Protection Advanced Technology*	0.000	44.274	43.527	50.869	-	50.869	66.129	59.510	44.109	44.143	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project addresses advanced technology development associated with providing the capability of Platform and Force Protection for the U.S. Navy. This project supports the development of technologies associated with mission capable, persistent and survivable Naval platforms (surface, subsurface, terrestrial, and air) in the areas of Manufacturing, Naval Engineering (formerly Platform Design & Engineering), Power and Energy (formerly Power, Energy & Propulsion), Undersea Systems and Naval Aerospace. This project develops technologies for enhanced capability of Naval aviation aircraft platforms in terms of mission effectiveness, platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. It also develops new Naval air vehicle concepts and high impact, scalable Naval air vehicle technologies.

The FY 2026 request for Mission Capable and Survivable Force includes $0 thousand of discretionary and $2,000 thousand of mandatory (reconciliation) for a total of $2,000 thousand. The mandatory funds support the development of advanced technologies that provide resilient mission capabilities and improved survivability under asymmetric attack. Research includes full spectrum advancements to characterize complex threats; perform proactive cyber shaping with decision advantage in response; enable resilience and survivability through maneuver and protection of mission critical infrastructure and operational forces; and reconstitute and sustain mission critical capabilities throughout the timeline of events. Further information for this reconciliation request is provided in Section 20005 (Low-Cost Weapons) of the Reconciliation Exhibit.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Surface Ship and Submarine Hull Mechanical and Electrical (HM&E)	25.585	24.501	30.202	0.000	30.202
Articles:	-	-	-	-	-
Description: This project addresses advanced technology development associated with providing the capability of Platform and Force Protection for the U.S. Navy. This project supports the development of technologies associated with mission capable, persistent and survivable manned/unmanned naval platforms (surface, subsurface and terrestrial) in the areas of Manufacturing, Naval Engineering , Power and Energy and Undersea Systems. The primary research efforts within this activity are focused on Development of Advanced Manufacturing & Sustainment Technologies, Advanced Naval Power Systems Development, Advanced Autonomous Systems, and Advanced Platform Development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Also funded in this activity is the Next Strategic Technology Evaluation Program (NextSTEP), which promotes innovation and entrepreneurial opportunities for naval personnel and student veterans through advanced technology development and demonstration projects at naval facilities. ***FY 2026 Plans:*** Continue: - Development of Advanced Naval Power Systems: Crewed and Uncrewed Naval Platforms demand high power/energy density, integrated modular power systems that require very low maintenance (people and cost), low fuel consumption, and highly resilient operation for extended mission duration. - Efforts associated with Next Strategic Technology Evaluation Program (NextSTEP) (formerly Energy Systems Technology Evaluation Program (ESTEP)), a prototype viability assessment program at naval facilities that promotes adoption, scaling and deployment to the warfighter of defense and dual-use technologies with the following goals: conduct advanced technology demonstrations to evaluate emerging technologies using Navy and Marine Corps operations as test beds; evaluate and de-risk new prototype technologies to help enable their acquisition and adoption; and provide opportunities for professional development for DON personnel. - Development of Advanced Manufacturing Technologies: Advanced Manufacturing efforts supporting readiness for undersea operations. This includes corrosion, inspection and automation. - Development of Advanced Manufacturing technologies in support of Next-Gen Naval Platforms. This will require new processes, automation and advanced digital tools at a high Manufacturing readiness level to meet the required platform performance requirements for new systems. - Efforts on Advanced Platform Resilience focusing on the integration of extensible sets of advanced technologies to improve the efficiency, performance, and survivability of naval platforms and systems. - Efforts associated with undersea systems. Initiate: - Development and demonstration of the capability to condition and derisk the large volume of combustible and toxic gas resulting from battery thermal runaway events to allow for safe transport of gasses off platforms. - Development of rapid qualification tools, including automation and accelerated testing for increased manufacturability. - Sustainment Technology efforts to mature materials state awareness for uncrewed systems for low/no maintenance operations and increased resiliency. - Development of Advanced Platform Architectures: This effort focuses on developing a design and capability assessment frameworks for the integration of complex sets of component technologies into a platform capability					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and/or subsystem in support of next generation autonomous and reduce crew platforms compliment platforms to achieve optimal military utility. - Efforts on Advanced Platform Autonomy focusing on the integration of advanced autonomy and artificial intelligence into naval systems and component technologies designed to improve warfighter and platform performance and efficiencies. - Efforts associated with undersea systems focused on at-sea testing and integration of undersea weapons technologies. - Schottky Barrier for Commercial High Temperature Polymer Films with a 2D Nano-assembly Coating project.					
FY 2027 Base Plans: Continue: - Development of Advanced Naval Power Systems: Crewed and Uncrewed Naval Platforms demand high power/ energy density, integrated modular power systems that require very low maintenance (people and cost), low fuel consumption, and highly resilient operation for extended mission duration. - Efforts associated with Next Strategic Technology Evaluation Program (NextSTEP) (formerly Energy Systems Technology Evaluation Program (ESTEP)), a prototype viability assessment program at naval facilities that promotes adoption, scaling and deployment to the warfighter of defense and dual-use technologies with the following goals: conduct advanced technology demonstrations to evaluate emerging technologies using Navy and Marine Corps operations as test beds; evaluate and de-risk new prototype technologies to help enable their acquisition and adoption; and provide opportunities for professional development for DON personnel. - Development and demonstration of the capability to condition and de-risk the large volume of combustible and toxic gas resulting from battery thermal runaway events to allow for safe transport of gasses off platforms. - Gas Conditioning of Battery Thermal Runaway Events - Development of Advanced Manufacturing Technologies: Advanced Manufacturing efforts supporting readiness for undersea operations. This includes corrosion, inspection and automation. - Development of Advanced Manufacturing technologies in support of Next-Gen Naval Platforms. This will require new processes, automation and advanced digital tools at a high Manufacturing readiness level to meet the required platform performance requirements for new systems. - Development of rapid qualification tools, including automation and accelerated testing for increased manufacturability. - Sustainment Technology efforts to mature materials state awareness for uncrewed and undersea systems for low/no maintenance operations and increased resiliency.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Efforts on Advanced Platform Resilience focusing on the integration of extensible sets of advanced technologies to improve the efficiency, performance, and survivability of naval platforms and systems. - Development of Advanced Platform Architectures: This effort focuses on developing a design and capability assessment frameworks for the integration of complex sets of component technologies into a platform capability and/or subsystem in support of next generation autonomous and reduce crew platforms compliment platforms to achieve optimal military utility. - Efforts on Advanced Platform Autonomy focusing on the integration of advanced autonomy and artificial intelligence into naval systems and component technologies designed to improve warfighter and platform performance and efficiencies. - Efforts associated with undersea systems focused on at-sea testing and integration of undersea weapons technologies. - Development of Schottky Barrier for Commercial High Temperature Polymer Films with a 2D Nano-assembly Coating ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The FY2026 and FY2027 increase is due to additional investments in the Power & Energy focus area, specifically in the NextSTEP and Naval Power Systems focus areas.					
Title: Aircraft Technology	18.689	19.026	6.282	0.000	6.282
Articles:	-	-	-	-	-
Description: The Aircraft Technology activity develops technologies for enhanced capability of Naval aviation aircraft platforms in terms of mission effectiveness, platform range, responsiveness, survivability, observability, readiness, safety and life cycle cost. It also develops new Naval air vehicle concepts and high impact, scalable Naval air vehicle technologies, such as helicopter and tiltrotor rotor drive systems, aerodynamics, propulsion systems, materials and structures for future and legacy air vehicles. This activity directly supports the Naval Research and Development Framework Priorities of Operational Endurance and Scalable Lethality. ***FY 2026 Plans:*** Continue:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Conduct technology development and maturation through Next Generation Propulsion Enablers (NGP-E) with major engine manufacturers on the highest priority, long lead propulsion, power and thermal management technologies. - Development of advanced, adaptive, and modular controls. - Development of advanced casing treatments Complete: - Evaluation of additively manufactured turbine components - More thermally efficient variable displacement fuel pumps - Naval Electrical Systems EMI Mitigation - Warhead down selects of fragmentation, initiation systems and required form factor based on experimental testing for transition to advanced program of record. - Rocket motor trade studies and initial concept design for transition to advanced program of record. - Technology transition of CAAM energetic components to industry vendor(s) to support program of record. Initiate: - Rotating Detonation Augmentor (RDA) Research and Military Utility Studies - Durable CMAS-Resistant Coating - Adhesion Promoter for thermal barrier coatings (TBC)/polymer matrix composites (PMC) Interface - Advanced Fan Flow Control - Advanced Fan and Stator Technology Development - structured multi-faceted warfighter interaction to establish a concept of operations and a high level system requirement set. Periodically revisit these products by engaging additional warfighter input to the developing prototype system during the planned iterative experimentation events. - development of a prototype system capability realized as a network of shipboard weapons with integrated enhanced autonomy to address the urgent threat from unmanned vehicles. Survey currently available weapons and sensors, and establish an early architecture definition. Conduct experimentation, both in a simulated environment, and via live-fire testing, with the intent to facilitate early validation of this architecture and to identify aspects that require additional technology maturation. Iteratively execute follow-on development and experimentation cycles to achieve a TRL6 capability. - the development of autonomy algorithms specifically suited to the hardware elements comprising the prototype system. Integrate these algorithms into the system to fully enable the concept of operations. Leverage best-of-					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
breed algorithms from government, academia, and industry; tailor and mature these capabilities to fully meet system operational performance requirements. - planning and execution of a shipboard event to demonstrate the effectiveness of the prototype system against unmanned surface and air systems within a relevant operational environment. ***FY 2027 Base Plans:*** Continue: - Conduct technology development and maturation through Next Generation Propulsion Enablers (NGP-E) with major engine manufacturers on the highest priority, long lead propulsion, power and thermal management technologies. - Rotating Detonation Augmentor (RDA) Research and Military Utility Studies - Durable CMAS-Resistant Coating - Development of advanced casing treatments - Advanced Fan and Stator Technology Development Complete: - Advanced Fan Flow Control - Development of advanced, adaptive, and modular controls. - Adhesion Promoter for thermal barrier coatings (TBC)/polymer matrix composites (PMC) Interface - structured multi-faceted warfighter interaction to establish a concept of operations and a high level system requirement set. Periodically revisit these products by engaging additional warfighter input to the developing prototype system during the planned iterative experimentation events. - development of a prototype system capability realized as a network of shipboard weapons with integrated enhanced autonomy to address the urgent threat from unmanned vehicles. Survey currently available weapons and sensors, and establish an early architecture definition. Conduct experimentation, both in a simulated environment, and via live-fire testing, with the intent to facilitate early validation of this architecture and to identify aspects that require additional technology maturation. Iteratively execute follow-on development and experimentation cycles to achieve a TRL6 capability. - the development of autonomy algorithms specifically suited to the hardware elements comprising the prototype system. Integrate these algorithms into the system to fully enable the concept of operations. Leverage best-of-breed					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
algorithms from government, academia, and industry; tailor and mature these capabilities to fully meet system operational performance requirements. - planning and execution of a shipboard event to demonstrate the effectiveness of the prototype system against unmanned surface and air systems within a relevant operational environment. Initiate: - Development of Compact Combustor Technology - Organic Matrix Composite Technology ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of Warhead down selects within the CAAM Compact Air-to-Air Missile project.					
Title: Mission Capable and Survivable Force	0.000	0.000	2.385	0.000	2.385
Articles:	-	-	-	-	-
Description: This research area develops advanced technologies that provide resilient mission capabilities and improved survivability under asymmetric attack. Research includes full spectrum advancements to characterize complex threats; perform proactive cyber shaping with decision advantage in response; enable resilience and survivability through maneuver and protection of mission critical infrastructure and operational forces; and reconstitute and sustain mission critical capabilities throughout the timeline of events. These technologies will seek to reduce the required manpower and skill levels devoted to a mission capable and survivable force, enhancing mission performance and reducing costs for the Navy in support of strategic national security objectives. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** - Initiate characterization of emergent threats through modeling and simulation to inform capability development. - Initiate development of proactive full spectrum cyber shaping capabilities that enable fleet maneuver and protection in response to asymmetric attack.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate component validation in laboratory and/or relevant environment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is due to program initiation in 6.3 PE 0603123N. These are follow-on efforts that have matured and progressed from prior basic and applied research programs that have shown promised technology maturation. This is not a new start.					
Title: Weapons Technology	0.000	0.000	12.000	0.000	12.000
Articles:	-	-	-	-	-
Description: This activity advances Navy strategic goals by maturing kinetic weapon system and sub-system science and technologies to greatly enhance performance and novel capabilities for current and future offensive and defensive kinetic weapons at a reasonable cost that will overmatch adversarial platforms and capabilities. Successful development will enable weapons with enhanced range, speed, lethality, and payload capacity within stringent Size, Weight, Power, and Cost (SWaP-C) and platform constraints. Science and Technology efforts will encompass tactical propulsion and weapon airframes, improved payloads, enablers for Find Fix Target Track (F2T2) capabilities, and collaborative weapon networking and weapon autonomy. Efforts will extend to include ancillary systems, materials development, and cost reduction activities, culminating in a high-TRL demonstrations of integrated, longer-range and more lethal weapon systems. Specific activities of coordinated RDT&E projects include: advanced weapon-specific materials and manufacturing development; cost reduction activities for novel propulsion components and electronic support systems; battery reliability and production risk mitigation; flight control and aerodynamic performance optimization; fuel system and kinetic energy management; advanced payload, fuzing, and target detection design; affordable and mass-manufacturable boost motor design, collaborative weapons, and weapon autonomy. The investment supports Department of War (DoW) priorities for affordable mass munitions and accelerates combat technologies. This effort leverages prior applied research and is not a new start. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 2912 / *Force Protection Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Evaluation and integration of rotating detonation engine (RDE) technology in propulsion systems for next-generation Naval strike systems. - Preliminary design, prototyping, and testing of an RDE test article with a supersonic inlet, diffuser, and nozzle to assess integrated propulsion system performance. - Conceptual design of strike system all-up-round and characterization of system performance. - Evaluation of material and thermal management solutions to demonstrate long-duration RDE operation. - Studies in military utility analysis and application of novel air breathing propulsion technologies. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY26 to FY27 is to accelerate weapons technology maturation, prototyping, system integration, and mission utility studies for advanced tactical propulsion, including rotating detonation engine (RDE) technologies for Navy-relevant applications. This increase directly supports Department of the Navy (DoN) priorities for developing next-generation strike capabilities, which in turn aligns with broader DoW objectives for affordable mass munitions and technology acceleration. This investment leverages prior applied research investments and is not a new start.					
Accomplishments/Planned Programs Subtotals	44.274	43.527	50.869	0.000	50.869

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603123N / *Force Protection Advanced Technology*	Project (Number/Name) 3270 / *Sec. 2912 Operational Energy Savings*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3270: *Sec. 2912 Operational Energy Savings*	0.000	2.670	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.670
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project addresses applied research associated with providing the capability of Platform and Force Protection for the U.S. Navy. It supports the development of technologies associated with surface naval platforms. Research is focused on providing technologically superior employment of naval assets and delivering warfighting capabilities at reduced operating and total ownership costs for surface and subsurface platforms through investments in applied research in Power and Energy.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Operational Energy Savings	2.670	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	2.670	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Resulting enabling technologies will transition into the MARSHAL Future Naval Capability project for improved Optimal Track Ship Routing (OTSR).

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603123N / *Force Protection Advanced Technology*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	7.723	70.229	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	77.952
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Zero Trust Architectures for Naval Power Systems ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on Zero Trust Architectures for Naval Power Systems	0.000	10.136
Congressional Add: Next Generation Electrification ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on Next Generation Electrification	0.000	26.065
Congressional Add: PFAS-Free, Fire-Resisteant, Self-Extinguishing Coa ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on PFAS-Free, Fire-Resistant, Self-Extinguishing Coatings	0.000	19.307
Congressional Add: High Performance Li-Ion Batteries ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on High Performance Li-Ion Batteries	0.000	4.827
Congressional Add: Next Generation Barrier ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on Next Generation Barrier	0.000	2.896
Congressional Add: University-Based Advanced Materials And Manufactur	0.000	3.137

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Initiate: Research on University-Based Advanced Materials and Manufacturing		
Congressional Add: Commercial UUVs Assembled at the Point of Deployme ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate: Research on Commercial UUVs Assembled at the Point of Deployment	0.000	3.861
Congressional Add: Self-extinguishing and thermal isolating materials ***FY 2025 Accomplishments:*** Develop bio-based material prototypes, leveraging technology previously studied by DoW laboratories, to produce fire resistant, self-extinguishing, and thermal isolating structural and insulating materials with exceptional fire resistance and thermal insulating properties. Specifically focused on fire-resistant self-extinguishing structural materials for ship bulkheads and thermal insulating material to inhibit heat transfer. Study smoke and toxicity in various shipboard fire environments. Produce product domestically w/ fully US-based supply chain. Expand existing effort to higher TRLs for testing in a range of form factors and real-world scenarios. ***FY 2026 Plans:*** N/A	4.827	0.000
Congressional Add: Deployable additive manufacturing of composite UUVs ***FY 2025 Accomplishments:*** Continue Deployable additive manufacturing of composite UUVs research efforts include advancement to the Technology Readiness Level (TRL) of automatedly manufactured composite undersea pressure vessels from TRL 6/7 to TRL 8 through continued testing and demonstration, integration with operational UUVs, and by resolving any discovered issues realized through testing. ***FY 2026 Plans:*** N/A	2.896	0.000
Congressional Adds Subtotals	7.723	70.229

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603123N / *Force Protection Advanced Technology*	**Project (Number/Name)** 9999 / *Congressional Adds*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603271N *I Electromagnetic Systems Advanced Technology*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	8.282	14.436	8.635	-	8.635	8.595	8.719	8.895	9.047	Continuing	Continuing
2913: *Electromagnetic Systems Advanced Technology*	0.000	8.282	8.644	8.635	-	8.635	8.595	8.719	8.895	9.047	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	5.792	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.792

A. Mission Description and Budget Item Justification

The Navy and Marine Corps' sophisticated electronics systems place heavy demands on the electromagnetic spectrum to accommodate information flow, defensive and offensive detection, tracking, and weapon system engagement. In distributed maritime operations, each of these platforms provides a set of capabilities that can be further combined for progressively larger and more complex operations. The Electromagnetic Systems Advanced Technology program addresses Radio Frequency (RF) technology for Surface and Aerospace Surveillance sensors and systems, Electronic Warfare (EW) sensors and systems, RF Communication Systems, Multi-Function sensor systems, and Position, Navigation and Timing (PNT) capabilities. Activities and efforts in this Program Element (PE) address technologies critical to enabling the transformation of discrete functions to network centric warfare capabilities, which simultaneously perform Radar, EW, and Communications and Network functions across platforms through multiple, simultaneous and continuous communications/data links.

Today's Sailors and Marines are enabled by Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This PE funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels (TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy* / BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603271N / *Electromagnetic Systems Advanced Technology*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	8.537	8.644	8.635	-	8.635
Current President's Budget	8.282	14.436	8.635	-	8.635
Total Adjustments	-0.255	5.792	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.208			
• Congressional Rescissions	-	-			
• Congressional Adds	-	6.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.255	0.000			
• Program Adjustments	0.000	0.000	0.000	-	0.000
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Augmented Context-Based Identity Awareness*	0.000	5.792
Congressional Add Subtotals for Project: 9999	0.000	5.792
Congressional Add Totals for all Projects	0.000	5.792

Change Summary Explanation

Funding: No significant change.

Technical: No significant change.

Schedule: No significant change.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603271N / *Electromagnetic Systems Advanced Technology*	Project (Number/Name) 2913 / *Electromagnetic Systems Advanced Technology*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2913: *Electromagnetic Systems Advanced Technology*	0.000	8.282	8.644	8.635	-	8.635	8.595	8.719	8.895	9.047	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Work in this project addresses cost-effective Radio Frequency (RF) technology for Surface and Aerospace Surveillance sensors and systems, Electronic Warfare (EW) sensors and systems, RF Communication Systems, Multi-Function sensor systems, and Position, Navigation and Timing (PNT) capabilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Electronic and Electromagnetic Systems	4.022	4.511	4.507	0.000	4.507
Articles:	-	-	-	-	-
Description: The overarching objective of the Electronic and Electromagnetic Systems Activity is to develop, test, and demonstrate Communications, Electronic Attack (EA), Electronic Surveillance (ES), Electronic Warfare (EW), and Radar functions. A portion of this Program Element (PE) is devoted to mid-term technology development in close concert with acquisition programs of record. The products of these efforts are planned for transition at the end of their schedule into the associated acquisition program of record. Technology development is focused on Distributed Electronic Warfare in support of Distributed Maritime Operations. Major thrust within the Electronics and Electromagnetic Systems program are: a) Advanced EW Enabling Technologies - Develop classified advanced electronic warfare technology in support of current and predicted capability requirements. ***FY 2026 Plans:*** Advanced Electronic Warfare Enabling Technologies: - Continue research in the areas of Electronic Support (ES); decoys and countermeasures against weapon tracking and guidance systems; Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Cyber Defense, Intelligence, Surveillance, Reconnaissance and Targeting (C5ISRT). - Continue development of Electronic Protection (EP) for our own weapons and C5ISRT from intentional and unintentional interference. - Continue efforts based on analysis of results of FY25 test and evaluation activities. Based on results of test and evaluation activities in FY25 and other years, continue refinement of EW concepts, techniques and designs.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603271N / *Electromagnetic Systems Advanced Technology*	**Project (Number/Name)** 2913 / *Electromagnetic Systems Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Examine updated, improved approaches regularly based on available analytical products, and modify as required. - Continue implementation of modified and additional EW capabilities, and initiate the use of Live, Virtual, and Constructive (LVC) methods for technology identification and exploration, including concepts of employment and training. ***FY 2027 Base Plans:*** Advanced Electronic Warfare Enabling Technologies: - Continue research in the areas of Electronic Support (ES); decoys and countermeasures against weapon tracking and guidance systems; Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Cyber Defense, Intelligence, Surveillance, Reconnaissance and Targeting (C5ISRT). - Continue development of Electronic Protection (EP) for our own weapons and C5ISRT from intentional and unintentional interference. - Continue efforts based on analysis of results of FY26 test and evaluation activities. Based on results of test and evaluation activities in FY26 and other years, continue refinement of EW concepts, techniques and designs. Examine updated, improved approaches regularly based on available analytical products, and modify as required. - Continue implementation of modified and additional EW capabilities, and continue the use of Live, Virtual, and Constructive (LVC) methods for technology identification and exploration, including concepts of employment and training. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Global Positioning System (GPS) and Navigation Technology	4.260	4.133	4.128	0.000	4.128
Articles:	-	-	-	-	-
Description: The overarching objective of this activity is to develop technologies that enable the development of affordable, effective and robust Position, Navigation and Timing (PNT) capabilities using non-Global Positioning System (GPS) navigation devices, or atomic clocks. This activity will increase the operational effectiveness of U.S. Naval units. The focus is on the mitigation of GPS electronic threats, the development of atomic clocks that					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603271N / *Electromagnetic Systems Advanced Technology*	**Project (Number/Name)** 2913 / *Electromagnetic Systems Advanced Technology*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
possess unique long-term stability and precision, and the development of compact, low-cost, Inertial Navigation Systems (INS). ***FY 2026 Plans:*** Position, Navigation and Timing (PNT): - Continue the development of components and systems to support alternative PNT solutions, e.g., Optical Doppler Velocity Log and Micro-Electromechanical Systems based gyroscopes. - Continue development of prototype inertial measurement systems, including a compact fiber optical gyro based inertial measurement system and a robust single axis accelerometer. - Initiate work supporting the maturation and integration of atomic accelerometer systems, through improved motion compensation, and miniaturization of telecom-based laser systems, Radio Frequency (RF) and digital electronics. ***FY 2027 Base Plans:*** Position, Navigation and Timing (PNT): - Continue the development of components and systems to support alternative PNT solutions, e.g., Optical Doppler Velocity Log and Micro-Electromechanical Systems based gyroscopes. - Continue work supporting the maturation and integration of atomic accelerometer systems, through improved motion compensation, and miniaturization of telecom-based laser systems, Radio Frequency (RF) and digital electronics. - Complete development of prototype inertial measurement systems, including a compact fiber optical gyro based inertial measurement system and a robust single axis accelerometer. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Accomplishments/Planned Programs Subtotals	8.282	8.644	8.635	0.000	8.635

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603271N / *Electromagnetic Systems Advanced Technology*	**Project (Number/Name)** 2913 / *Electromagnetic Systems Advanced Technology*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603271N / *Electromagnetic Systems Advanced Technology*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	5.792	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.792
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Develop AI/ML algorithms for object recognition.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Augmented Context-Based Identity Awareness	0.000	5.792
FY 2025 Accomplishments: N/A		
FY 2026 Plans: Develop AI/ML algorithms for object recognition.		
Congressional Adds Subtotals	0.000	5.792

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603273N *I Science & Technology for Nuclear Re-entry Systems*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	115.050	121.618	114.767	-	114.767	116.043	118.735	119.329	121.516	Continuing	Continuing
3095: *Nuclear Delivery Systems*	0.000	115.050	121.618	114.767	-	114.767	116.043	118.735	119.329	121.516	Continuing	Continuing

A. Mission Description and Budget Item Justification

This Program Element supports Department of War (DoW) priorities for enduring science and technology (S&T) for nuclear re-entry systems. For several decades, foundational nuclear R&D investments outside of major acquisition programs have been significantly reduced. This historical trend contrasts with the DoW's recent recognition of the need to invest in advanced nuclear-related components and technologies in support of the nuclear enterprise, nuclear deterrence operations, and integrated deterrence operations. This effort will provide pre-program of record advanced technology development that will effectively address evolving threats and maintain operational effectiveness while also aligning with the highest-level guidance for nuclear forces identified in the Nuclear Posture Review and National Defense Strategy. This effort will contribute to preserving the viability of the nuclear deterrent in a cost-effective manner by reducing technical and programmatic risk associated with execution of the overall nuclear modernization program. These ends will be reached by developing technologies to inform future system requirements, establishing interagency partnerships for re-entry system test platform development, and coordinating with existing programs for next generation strategic system development.

In conjunction with U.S. Strategic Command (STRATCOM) Priorities and collaboration with Air Force, the Nuclear Delivery Systems (NDS) funding will identify and mature technologies from Technology Readiness Level (TRL) 3 to TRL 6 via relevant ground and flight test environments.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	118.624	121.618	115.181	-	115.181
Current President's Budget	115.050	121.618	114.767	-	114.767
Total Adjustments	-3.574	0.000	-0.414	-	-0.414
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-3.574	0.000			
• Program Adjustments	0.000	0.000	-0.201	-	-0.201
• Rate/Misc Adjustments	0.000	0.000	-0.213	-	-0.213

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	Project (Number/Name) 3095 / *Nuclear Delivery Systems*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3095: *Nuclear Delivery Systems*	0.000	115.050	121.618	114.767	-	114.767	116.043	118.735	119.329	121.516	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project will fund advanced development of nuclear delivery technologies, subsystems, and components for reentry systems in alignment with the Office of the Under Secretary of War for Research and Engineering (USW(R&E)) guidance on relevant technology categories: Aeroshell, Fuzing, Guidance, Navigation, and Control (GNC), Advanced Capability, and Testing. These activities will reduce the operational, programmatic and technological risk facing modernization of Navy reentry systems.

To achieve its objectives, the NDS S&T program will undertake several initiatives, including:

* Developing and maturing advanced technologies through a series of experiments designated as Griffin and Peregrine. The experiments will include three Government Reference Designs (GRD) experimental reentry bodies, designated Griffin 2.0, Griffin 2.1, and Peregrine 2.0. These experimental reentry bodies will have increasing capability and will be used to evaluate and demonstrate new technologies and concepts for nuclear delivery systems.
* Developing nuclear delivery system technologies through the use of a series of ground and flight tests of components and subsystems. These test will be informed by modeling and simulation and will utilize existing and new capabilities that enable a better understanding of how systems will perform in a realistic and operationally relevant environment.
* Partnering with other organizations, as appropriate, to leverage their investments in relevant technology maturation that aligns with the USW(R&E) technology areas for NDS S&T. This may include investments in advanced materials, and other technologies that can be used to improve the performance and survivability of nuclear delivery systems.
*Allocating resources to support GRD development and demonstration over the period of performance will ensure that the NDS S&T program has the necessary resources and funding to achieve its objectives and support the development of new nuclear delivery systems.

Overall, the NDS S&T program is a critical component of the DoW's efforts to modernize its nuclear delivery systems and ensure the continued viability of the nuclear deterrent. By investing in advanced technologies and concepts, the program will help to reduce the operational, programmatic, and technological risk associated with nuclear modernization, and ensure that the United States remains a leader in nuclear deterrence.

Further information can be provided at a higher classification level.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Aeroshell	17.936	27.059	22.097	0.000	22.097
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	**Project (Number/Name)** 3095 / *Nuclear Delivery Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: Program advancements include significant improvements to the aeroshell, specifically the development of advanced materials and designs crucial for protecting the re-entry vehicle during atmospheric re-entry. These advancements are paramount to enhancing the survivability and effectiveness of the re-entry vehicle. The upgraded materials are designed to withstand extreme temperatures and pressures encountered during hypersonic flight, ensuring the payload reaches its intended target. ***FY 2026 Plans:*** - Continue alternative substrate and thermal protection system (TPS) development - Continue re-entry antenna window development - Continue plasma and reentry environmental characterization studies to enable new and expanded capabilities - Investigate novel manufacturing techniques - Further information can be provided at a higher classification level ***FY 2027 Base Plans:*** - Continue alternative substrate and thermal protection system (TPS) development - Continue re-entry antenna window development - Continue plasma and reentry environmental characterization studies to enable new and expanded capabilities - Investigate novel manufacturing techniques - Further information can be provided at a higher classification level ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The planned $4.962 million decrease from FY 2026 to FY 2027 is a result of the program's strategic phasing. FY 2026 funding supports the majority of the preparatory work for the integrated aeroshell and GN&C demonstration, while the reduced FY 2027 budget covers the demonstration's execution.					
Title: Fuzing	15.867	13.513	17.301	0.000	17.301
Articles:	-	-	-	-	-
Description: Advancements in fuzing technology have enabled the development of highly accurate and reliable systems for detonating nuclear warheads at optimal times and locations. These advancements are critical for maintaining a credible and effective nuclear deterrent. By ensuring detonation at the precise moment and location, these systems maximize the weapon's intended effects while minimizing unintended consequences.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	**Project (Number/Name)** 3095 / *Nuclear Delivery Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: - Continue development of advanced fuzing technologies, including radar ranging fuzes - Begin concept and architecture studies for a fuzing logic controller - Further information can be provided at a higher classification level ***FY 2027 Base Plans:*** - Continue development of advanced fuzing technologies - Begin integration activities for an FY 2028 MACH-TB flight test - Begin prototype build of a fuzing logic controller - Further information can be provided at a higher classification level ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The $3.788 million funding increase between FY 2026 and FY 2027 develops the fuzing logic controller, enabling testing of advanced fuzing options and a MACH-TB fuzing demonstration.					
Title: Guidance Navigation and Control (GNC) ***Articles:*** ***Description:*** Guidance, Navigation, and Control (GNC) systems are advanced technologies designed to provide highly accurate and robust performance for re-entry vehicles. These systems ensure precise target delivery, even when facing sophisticated defensive measures intended to disrupt or intercept the vehicle. ***FY 2026 Plans:*** - Continue development of an accelerometer that can handle higher g-loading - Continue development of a radiation hardened inertial measurement unit (IMU) - Continue development of a radiation hardened flight computer - Continue development of navigation aids for challenging environments - Begin advanced hardened actuator development - Continue attitude control system (ACS) development - Further information can be provided at a higher classification level ***FY 2027 Base Plans:*** - Continue development of an accelerometer that can handle higher g-loading	66.331 -	72.543 -	64.063 -	0.000 -	64.063 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	**Project (Number/Name)** 3095 / *Nuclear Delivery Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development of a radiation hardened inertial measurement unit (IMU) - Continue development of a radiation hardened flight computer - Continue development of navigation aids for challenging environments - Continue advanced hardened actuator development - Continue attitude control system (ACS) development - Further information can be provided at a higher classification level ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The $8.48 million decrease from FY 2026 to FY 2027 is a result of the program's strategic phasing. FY 2026 funding supports the majority of the preparatory work for the integrated aeroshell and GN&C demonstration, while the reduced FY 2027 budget covers the demonstration's execution.					
Title: Testing	12.916	6.403	9.164	0.000	9.164
Articles:	-	-	-	-	-
Description: Rigorous testing is conducted throughout the development lifecycle of these classified programs. This comprehensive testing regime is absolutely critical for ensuring the reliability, security, and effectiveness of these highly sensitive systems. ***FY 2026 Plans:*** In FY 2026 NDS will continue preparing for upcoming ground and flight tests. Additionally in FY 2026 system integration will begin for ground and flight test units in support of future testing on subscale and full scale platforms. Tasks that will be focused upon include long lead time procurements and system integration for a Griffin 2.0 full scale flight test. - Development of data compression and down-selection algorithms required to support navigation aid and fuzing options - Development of concepts, requirements, and trade studies for a Navy NDS test bed to develop a standardized interface to the MACH-TB platform to allow for more affordable, frequent testing to accelerate technology maturation efforts ***FY 2027 Base Plans:*** In FY 2027 NDS will execute comprehensive ground and flight testing programs utilizing Hardware-in-the-Loop (HWIL) systems, missile emulators, and Multi-Service Advanced Capability Hypersonic Test Beds (MACH-					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	**Project (Number/Name)** 3095 / *Nuclear Delivery Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
TBs) while advancing system integration for multiple test platforms. Additionally in FY 2027 full-scale system integration will continue for ground and flight test units supporting testing on both subscale and full scale platforms. - Requirement generation and concept development for an integrated ground test demonstration of data compression and down-selection algorithms integrated with a the fuzing logic controller - Continue development of Navy NDS test bed - Begin prototype builds ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The $2.761 million increase between FY 2026 and FY 2027, enabling the use of Hardware-in-the-Loop (HWIL) systems, missile emulators, and Multi-Service Advanced Capability Hypersonic Test Beds (MACH-TBs), will improve testing accuracy by simulating real-world conditions to identify and correct potential system flaws early, ultimately resulting in more reliable and effective naval systems.					
Title: Advanced Capability	2.000	2.100	2.142	0.000	2.142
Articles:	-	-	-	-	-
Description: Classified advancements have enhanced the re-entry vehicle's ability to overcome sophisticated defensive systems, such as missile defenses. This enhanced penetration capability is of paramount importance for maintaining a credible deterrent and ensuring national security. The ability to reliably defeat advanced missile defenses guarantees the re-entry vehicle's capacity to reach its intended target, even in the face of layered and technologically advanced interception attempts. ***FY 2026 Plans:*** In FY 2026 NDS will continue developing new advanced capabilities. Key work areas will be: - Studies and evaluation for advanced capability development - Data transfer capability - Advanced sensor technology and subcomponents - Further details held at higher classification level ***FY 2027 Base Plans:*** In FY 2027 NDS will continue advanced capability development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603273N / *Science & Technology for Nuclear Re-entry Systems*	**Project (Number/Name)** 3095 / *Nuclear Delivery Systems*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Further details held at higher classification level ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The $0.042 million increase between FY 2026 and FY 2027 accounts for inflation.					
Accomplishments/Planned Programs Subtotals	115.050	121.618	114.767	0.000	114.767

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Not applicable

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603640M *I MC Advanced Technology Demo*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	287.017	447.950	287.897	-	287.897	241.294	254.259	257.482	261.538	Continuing	Continuing
2223: *Marine Corps ATD*	0.000	99.463	86.304	116.336	-	116.336	110.684	123.985	125.770	127.948	Continuing	Continuing
2297: *Futures Directorate*	0.000	131.540	218.206	166.264	-	166.264	125.166	124.776	126.135	127.916	Continuing	Continuing
2958: *Cyberspace Activities*	0.000	4.946	5.201	5.297	-	5.297	5.444	5.498	5.577	5.674	Continuing	Continuing
9999: *Congressional Adds*	0.000	51.068	138.239	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	189.307

A. Mission Description and Budget Item Justification

The United States Navy/Marine Corps team is the most potent naval fighting force in the world. Fundamental to their success are the technologies necessary for effective Distributed Maritime Operations (DMO), Expeditionary Advanced Base Operations (EABO), Littoral Operations in Contested Environments (LOCE), Joint Warfighting Concepts, Stand-In Forces, and Reconnaissance / Counter-Reconnaissance. The Office of Naval Research (ONR) combines knowledge of the naval mission with researchers to select and explore solutions critical to expeditionary warfighting needs. It has become clear the joint force needs a capability that operates persistently and with maximum organic mobility and dispersion to compete and deter in the contact and blunt layers. This Program Element (PE) supports investments in critically needed capabilities, as outlined in EABO, that seeks to initially operate below the threshold of armed conflict by winning the reconnaissance and counter-reconnaissance competition in facilitating deterrence by detection.

The USMC also requires combat credible capabilities that employ mobile, low-signature, operationally relevant, and relatively easy to maintain and sustain naval expeditionary forces from a series of austere, temporary locations ashore or inshore within a contested or potentially contested maritime area in order to conduct sea denial, support sea control, or enable fleet sustainment. These future challenges and portents demand robust technologies for the Marine Corps, but the technology options are constrained. They must have a lightweight deployable character, and the ability to operate in austere conditions with little fixed infrastructure or support while retaining the agility and lethality of an integrated maneuver force. Technology must provide full spectrum capability against robust and complex peer and near-peer adversaries while meeting size, weight, power, cost limitations, and information availability command and control systems that work within degraded, disconnected, intermittent and limited environments with reduced threat detectability.

The approach within this Program Element (PE) encompasses ideas that support both revolutionary and evolutionary capabilities, and in this way considers and balances both "push" and "pull" aspects of technology projects. This PE matures technologies emerging from PE 0602131M-Marine Corps Landing Force Technology to develop concept prototypes and initial experimentation to confirm utility and suitability in an environment relevant to operations.

This PE funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels (TRLs) of 4 (component and/or breadboard validation in laboratory environment), 5 (component and/or breadboard validation in relevant environment), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603640M *I MC Advanced Technology Demo*

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

The FY 2026 spend plan amount for Research, Development, Test and Evaluation, Navy includes $447,950 thousand of discretionary and $63,413 thousand of mandatory (reconciliation) for a total of $511,363.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	296.147	309.711	310.231	-	310.231
Current President's Budget	287.017	447.950	287.897	-	287.897
Total Adjustments	-9.130	138.239	-22.334	-	-22.334
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-4.961			
• Congressional Rescissions	-	-			
• Congressional Adds	-	143.200			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.153	0.000			
• SBIR/STTR Transfer	-8.979	0.000			
• Program Adjustments	0.000	0.000	-22.334	-	-22.334
• Rate/Misc Adjustments	0.002	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Low-Cost Attritable Aircraft Technology*	0.000	24.135
Congressional Add: *SIGNIT Pod for Unmanned Aircraft*	0.000	19.307
Congressional Add: *Autonomous Ship-To-Shore Group 4 Hybrid eVTOL*	0.000	7.916
Congressional Add: *Joint Assured Positioning Navigation and Timing*	0.000	5.792
Congressional Add: *RAID Plate*	0.000	6.757
Congressional Add: *Advanced ISR/AiTDR/EW Prototype for Mobile Operati*	0.000	7.723
Congressional Add: *Arctic Medical Evacuation and Treatment System*	0.000	6.757
Congressional Add: *Attritable UAVs for Counter A2/AD Missions*	0.000	4.344
Congressional Add: *Distributed RF Photonic Systems*	0.000	1.448
Congressional Add: *Littoral Maneuver Capability*	0.000	18.342
Congressional Add: *Multispectral Camouflage Hangar System*	0.000	4.827

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603640M *I MC Advanced Technology Demo*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Congressional Add: *Next Generation Rotary Wing Logistics UAS*	0.000	4.827
Congressional Add: *Stand-Off Security Inspection and Surveillance Sys*	0.000	3.861
Congressional Add: *UAS Agile System Development*	0.000	5.792
Congressional Add: *Aquatic Drones for Littoral Maneuver*	0.000	9.654
Congressional Add: *Low-Cost tactical hypersonic long-range fires*	4.827	6.757
Congressional Add: *Mutli-function array for C-UAS*	9.654	0.000
Congressional Add: *low-cost attritable aircraft technology*	33.691	0.000
Congressional Add: *Composite shelters*	2.896	0.000
Congressional Add Subtotals for Project: 9999	51.068	138.239
Congressional Add Totals for all Projects	51.068	138.239

Change Summary Explanation

Funding: The FY 2027 decrease is due to proper realignment of the Low-cost Uncrewed Combat Attack System (LUCUS) project. Funds were realigned from PE 0603640M into PE 0604320M based on technology maturation to support accelerated one-way attack (OWA) munitions development and scaling. In addition, it reflects a decrease in funding in the MC Advanced Technology Demo and Future Directorate and a strategic realignment of resources to address higher Department of the Navy (DON) priorities, as well as the completion of various experimentation and development efforts.

Technical: N/A

Schedule: N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603640M / *MC Advanced Technology Demo*	Project (Number/Name) 2223 / *Marine Corps ATD*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2223: *Marine Corps ATD*	0.000	99.463	86.304	116.336	-	116.336	110.684	123.985	125.770	127.948	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds technology demonstration, experimentation, and prototyping; and more technologically mature projects within the Future Naval Capability (FNC) process as means to inform, enhance, enable, and invent future concepts and capabilities with new Science and Technology (S&T). This project is organized into ten activities, the core of which is represented by the eight Expeditionary Warfighting Capability Areas.

Emphasized within this project are increased efforts to actively demonstrate advanced technologies and system concepts. These demonstrations and experiments focus on the specific technologies, not necessarily their operational application, and vary based on the technical maturity of the project. This early technology exposure gives Marines a view into the future and enables them to use their imagination and innovation to envision novel employment of the technology and inform the acquisition process.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Command, Control, Communications, Computers (C4)	11.414	1.700	7.900	0.000	7.900
Articles:	-	-	-	-	-
Description: This activity investigates robust, resilient, and secure networked communications pathways and capability that support an expeditionary force's distributed and disaggregated operations. Research supports both networked and local computation for communications that exploits the expeditionary forces close physical proximity to threats while mitigating shortfalls commensurate within denied, degraded, intermittent, or limited (DDIL) communications environments. Expeditionary forces must operate in the cyber domain and in addition to defending communications networks, vehicles, and weapons systems, are reliant on electronic controllers for basic operations and as such are susceptible to cyberattacks. Technologies addressed within this activity include secure, robust, self-forming, mobile communications networks; distributed computing to support information dissemination to all echelons; improved capabilities in over-the-horizon, beyond line-of-sight, and restricted environment communications and sensors; and software and data processing to support formation of an appropriate common picture. Other efforts include power management, low detectability, conforming to Size, Weight, Power, Cost constraints, and interoperability within the joint environment.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Further, this activity integrates and demonstrates enhanced communications and situational awareness capabilities in experimental and warfighting environments reflecting USMC operations. Advanced technology resources will be developed and applied to complement commercial, other service, and defense agency investments to produce a technology base addressing identified Marine Corps technology gaps. Focus will be on developing component level prototypes and experimentation in relevant environments. ***FY 2026 Plans:*** - Continue research and development of Artificial Intelligence (AI) and Machine Learning (ML) functionality for Marine Corps platforms, command and control systems including combat identification, threat evaluation, engageability and effector management in a multi-platform Live Virtual & Constructive (LVC) experiment. - Continue development and advancement of new capabilities to create realistic scenarios, simulate social dynamics, adjudication capabilities, together with models and algorithms to support realistic, interactive information warfare exercises. - Complete new low-profile and reduced weight and power aperture with simultaneous transmit and receive signals compatible with multiple satellite constellations. - Initiate force-on-force unscripted experimentation of AI-augmented Command and Control (C2) systems for "one versus many" swarm control in small unit (company and below) simulated combat scenarios. - Initiate experimentation of AI-enabled tactical advisors that analyze sparse data to provide small unit commanders with sound tactical recommendations in Expeditionary Advanced Base Operations (EABO) support scenarios. - Initiate multi-modal simulation of operations in the information environment to develop realistic data for information warfare. ***FY 2027 Base Plans:*** Continue: - Develop Artificial Intelligence (AI) and Machine Learning (ML) functionality for Marine Corps platforms, command and control systems including combat identification, threat evaluation, engageability and effector management in a multi-platform Live Virtual & Constructive (LVC) experiment. - Development and advancement of new capabilities to create realistic scenarios, simulate social dynamics, adjudication capabilities, together with models and algorithms to support realistic, interactive information warfare exercises. - Force-on-force unscripted experimentation of AI-augmented Command and Control (C2) systems for "one versus many" swarm control in small unit (company and below) simulated combat scenarios.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Experimentation of AI-enabled tactical advisors that analyze sparse data to provide small unit commanders with sound tactical recommendations in Expeditionary Advanced Base Operations (EABO) support scenarios. - Multi-modal simulation of operations in the information environment to develop realistic data for information warfare. Initiate: - Advanced development to implement propagation environment aware signature management and communication planning over land for small, forward-deployed units under the Expeditionary Advanced Base Operations (EABO) construct to include weather effects, terrain, land use/cover, and spectrum clutter. - Development of electromagnetic spectrum operation tools optimized for contested electromagnetic environments. - Marine Corps component commander technology demonstrations with strategic counter-Grey Z tools and techniques that anticipate and counter destabilizing threats. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of efforts (1) to implement propagation environment aware signature management and communication planning over land for small, forward-deployed units under the Expeditionary Advanced Base Operations (EABO) (2) demonstrate strategic counter-gray Grey Z tools and techniques that anticipate and counter destabilizing threats.					
Title: Firepower	11.414	10.209	13.580	0.000	13.580
Articles:	-	-	-	-	-
Description: The activity investigates a large variety of weapons technologies to enhance fires capabilities of Fleet Marine Forces as part of joint maritime campaigns to counter emerging threats and create new opportunities for the joint force to secure operational advantage. Research efforts increase range, lethality, and capacity, while maintaining mobility and tempo to operate inside actively contested maritime domains, to achieve overmatch fires capabilities when operating within the landward portions of the littorals, and to provide weapons system capabilities able to persist when operating within the adversary's intelligence, surveillance, collection, and weapons ranges. Focus on low size, weight, power, and cost of weapons components and weapon systems, having low manpower and cognitive burdens to operate, with low logistics burdens, stresses technical solutions. This activity furthers the maturity of researched technology solutions by also developing the					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
integration required to effectively demonstrate and test emergent capabilities. Weapons system technologies being developed include fire control, launch and propulsion, precision guidance, navigation, and control, seekers, fuzing, and lethality. ***FY 2026 Plans:*** - Continue advanced development of integrated technologies for low-cost, extended range, precision guided munitions which will improve lethality and special effects payloads against various types of stationary and moving targets on land and water, as well as in satellite and network denied environments. - Continue research to support additional live fire demonstrations and updating fusing for Global Positioning System (GPS) degraded environments. - Initiate development of extended range, area effects munitions that combine state of the art seeker and warhead technology while reducing required munition salvo sizes. - Initiate effort that leverages prior USN/USMC investments to develop and demonstrate development of tactical-scale hypersonic missile proving timely fires at extended ranges. ***FY 2027 Base Plans:*** Continue: - Advanced development of integrated technologies for low-cost, extended range, precision guided munitions which will improve lethality and special effects payloads against various types of stationary and moving targets on land and water, as well as in satellite and network denied environments. - Development of extended range, area effects munitions that combine state of the art seeker and warhead technology while reducing required munition salvo sizes. Complete: - Research to support additional live fire demonstrations and updating fusing for Global Positioning System (GPS) degraded environments. - Research effort that leverages prior USN/USMC investments to develop and demonstrate development of tactical-scale hypersonic missile proving timely fires at extended ranges. Initiate: - Technology demonstration effort for a validated universal architecture that optimized optimizes the operational value of digital signal processors at the tactical edge. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of an effort to demonstrate and validate a universal architecture that optimized the operational value of digital signal processors at the tactical edge.					
Title: Force Protection	11.414	15.351	15.199	0.000	15.199
Articles:	-	-	-	-	-
Description: This activity investigates new ways and means to protect forces and materiel across all operational settings from contested sea-land surface interfaces to complex urban environments. The portfolio protects against adversaries' challenges such as guided-rockets and missiles, mobile coastal artillery, threat Electronic Warfare and Counter Intelligence, and Surveillance and Reconnaissance. Mines and obstacles both in the water and ashore also complicate amphibious landings. The activity invests in vehicle survivability aspects that are exacerbated due to Size, Weight, and Power Cost constraints inherent to Marine Corps operation and the harsh nature of the amphibious environment. Technologies addressed include lightweight armor for ballistic and underbody blast protection, advanced sensors for counter tactical surveillance, active protection, and signature management. This activity also considers technology for payloads, packages and sensors that are needed by amphibious vehicles (both manned and unmanned) including mine counter measures; explosive hazard defeat systems; and obstacle and threat detection systems as well as technologies for improved protection for individuals against blast, ballistic and blunt impact threats. Technologies in this activity enable Marine Corps forces to maintain operational tempo through a range of environments by avoiding or detecting surveillance and targeting capabilities before engagement; counter detection and targeting (e.g. long range sniper, urban shooter, rocket propelled grenades) and delay vehicle detection and identification through signature management/control. ***FY 2026 Plans:*** - Continue efforts looking at counters to autonomy and sensors/perception. - Continue advanced research that integrates and demonstrates sensors and systems to enable autonomous, multi-domain amphibious operations in mined and obstacle environments. - Continue research effort to provide a solid-state High-Power Microwave prototype in a form factor that upon transition will enable the USMC to conduct Expeditionary Advanced Basing Operations (EABO) while being					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
capable of defeating small unmanned autonomous system (sUAS) swarms and other unmanned systems in littoral regions. - Continue research to develop, integrate and field test systems for the precision neutralization of threat explosive hazards, mines, and kill chain components with lethal or non-lethal force from standoff distances to enable in-stride littoral movement and maneuver, designated ground corridors, at forward aviation points, littoral transition points, and in designated areas of interest. - Continue efforts that will rapidly assess and report the condition of expeditionary sites using the same or similar sensors suites used in the detection of explosive hazards. The efforts will also include development of a common messaging protocol to a control center for assessment sites for both explosive and other related damage. - Continue advanced technology development in support of expeditionary undersea warfare missions, to include investigation and applied analysis of prototype sensing command and control systems, distributed effects, and shore to sea systems integration. - Continue design and prototyping for compact and light weight launcher technologies in support of kinetic force protection, both afloat and ashore. - Continue integration of enabling components and software onto ultra-long endurance unmanned autonomous systems (UAS) in order to demonstrate persistent surveillance over highly dispersed operational regions. - Complete research development of compact rapid analysis and sensing systems to assess expeditionary operational site by detecting battle damage, surface and sub-surface explosive hazards detection and classification. - Initiate research to integrate provided tactical laser and beam director into a tactical vehicle for military utility experiments.					
FY 2027 Base Plans: Continue: - Research effort looking at counters to autonomy and sensors/perception. - Advanced research that integrates and demonstrates sensors and systems to enable autonomous, multi-domain amphibious operations in mined and obstacle environments. - Research effort to provide a solid-state High-Power Microwave prototype in a form factor that upon transition will enable the USMC to conduct Expeditionary Advanced Basing Operations (EABO) while being capable of defeating small unmanned autonomous system (sUAS) swarms and other unmanned systems in littoral regions. - Develop, integrate and field test systems for the precision neutralization of threat explosive hazards, mines, and kill chain components with lethal or non-lethal force from standoff distances to enable in-stride littoral					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
movement and maneuver, designated ground corridors, at forward aviation points, littoral transition points, and in designated areas of interest. - Efforts that will rapidly assess and report the condition of expeditionary sites using the same or similar sensors suites used in the detection of explosive hazards. The efforts will also include development of a common messaging protocol to a control center for assessment sites for both explosive and other related damage. - Advanced technology development in support of expeditionary undersea warfare missions, to include investigation and applied analysis of prototype sensing command and control systems, distributed effects, and shore to sea systems integration. - Integration of enabling components and software onto ultra-long endurance unmanned autonomous systems (UAS) in order to demonstrate persistent surveillance over highly dispersed operational regions. - Research to integrate provided tactical laser and beam director into a tactical vehicle for military utility experiments. Complete: - Prototyping and demonstration of a compact and affordable interceptor, with integrated warhead and seeker package for kinetic force protection, both afloat and ashore. Initiate: - Research to develop a medically informed prototype effort to enhance Marine warfighter protection against emerging threats. - Advanced development to build a prototype nonlinear transmission line high power directed energy system operational assessment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease of funding from FY 2026 to FY 2027 is due to the completion of an effort to demonstrate a compact and affordable interceptor, with integrated warhead and seeker package for kinetic force protection, both afloat and ashore.					
Title: Human Performance, Training and Education	7.847	7.119	10.218	0.000	10.218
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: This activity investigates several technology investment areas; warrior resilience, and decision-making and expertise development. Warrior resilience is focused on advanced training technologies and methodologies that enhance neural, cognitive, and physical readiness. Decision making and expertise development accelerates development and improves the retention of skills in decision making, situation awareness, and individual and team adaptability and coordination on decentralized, dynamic and dispersed battlefields. Focus will be on developing component level prototypes for Marine for evaluation and experimentation. ***FY 2026 Plans:*** - Continue research developing and delivering scalable software applications and plug-and-play hardware components that enable customizable human performance collection, assessment, monitoring, and management. - Continue research and development in extended reality, synthetic agent(s), and training feedback technologies that integrate with future fires and kill-web systems to provide realistic synthetic enemies and greatly enhance Marine Corps training effectiveness. - Continue to develop and test mixed reality technologies that will improve target identification, classification, and situational awareness for fires applications. - Continue research and development of methodologies to improve small unit decision-making training and operational capabilities through the use of human-machine teaming, multi-modal interactions, and after-action review and trend analysis. - Complete development and assessment of new marksmanship training approaches, analysis, and visualizations to improve marksmanship and extend the lethality measurement approach to low-visibility operations, indirect fires lethality assessments, and other complex scenarios. - Complete development of infrastructure to incorporate wearable physiological monitoring devices, predictive algorithms, health tracking capability, and related technologies that can be operated by Marine Corps organizations and end users that will increase physical readiness and reduce potential injuries. - Complete development of adaptive and experiential training applications and assessments to address requirements stated in Training and Education 2030. - Complete development of marksmanship data collection tools that provides analysis and actionable feedback based on Marine Corps established parameters and doctrine.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate effort to develop portable Live, Virtual, and Constructive (LVC) kits that enable standalone, integrated training within a contested littoral or maritime operating environment for forward deployed units. ***FY 2027 Base Plans:*** Continue: - Research developing and delivering scalable software applications and plug-and-play hardware components that enable customizable human performance collection, assessment, monitoring, and management to improve lethality and readiness. - Research and development in extended reality, synthetic agent(s), and training feedback technologies that integrate with future fires and kill-web systems to provide realistic synthetic enemies and effects and greatly enhance Marine Corps training effectiveness. - Develop and experiment with Augmented Reality (AR) technologies to improve target identification, classification, and situational awareness for ground force / infantry fires applications. - Research development and experimentation with technologies and methodologies to improve small unit decision-making training and operational capabilities through the use of human-machine teaming, multi-modal interactions, and after-action review and trend analysis. - Development on prototype and experimentation with portable Live, Virtual, and Constructive (LVC) kits that enable standalone, integrated training within a contested littoral or maritime operating environment for forward deployed units. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to increased investments in research to (1) develop and experiment with Augmented Reality (AR) technologies to improve target identification, classification, and situational awareness for ground force / infantry fires applications and (2) extended reality, synthetic agent(s), and training feedback technologies that integrate with future fires and kill-web systems to provide realistic synthetic enemies and effects and greatly enhance Marine Corps training effectiveness.					
Title: Intelligence, Surveillance, and Reconnaissance (ISR)	9.630	15.828	16.416	0.000	16.416
Articles:	-	-	-	-	-
Description: This activity investigates enhanced situational awareness, persistent surveillance, and tactical decision making through automated analysis of data and rapid integration of information and acquired knowledge. Specific technologies in this activity effectively present actionable information to decision-makers,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
especially those at the lower command levels. This includes biometric monitoring for expeditionary operations, operational Course of Action development, and autonomous surveillance in support of distributed operations. Conduct advanced development research on the impact of machine learning on mission outcomes. Will investigate the operational relevance of enhanced situational understanding and machine-aided tactical decision-making. This includes presenting actionable information (e.g. support to planning, mission monitoring, and re-planning) to decision makers. Further, this activity supports the demonstration of technologies to enhance situational awareness and tactical decision making through automated analysis, fusion of data, rapid integration of information, and acquired knowledge resulting in actionable intelligence at the lower command levels. The activity includes the demonstration of ISR efforts involving enhanced reconnaissance and persistent surveillance, and sensors for unmanned ground and aerial vehicles. Advanced technology demonstrations also include the collection of information (monitoring, sensing, and locating) in the 3-Dimensional urban battlespace as well as exploiting information (identifying and classifying data) as part of the intelligence preparation of the battlespace in order to facilitate operational maneuver and distributed operations. ***FY 2026 Plans:*** - Continue to develop a recommendation engine prototype to adapt strategies based on adversary actions. - Continue advanced technology research development to evaluate operational utility of Artificial Intelligence (AI) and Machine Learning (ML) algorithms to improve decision making; and develop, demonstrate, and experiment with decision aids operating on fused organic sensor data focused on improving decision-making and reducing operator workload during Marine Corps operations exercises and operations. - Continue to develop generate synthetic data useful for machine learning while learning and demonstrating how to combine real data from training or operations. - Continue research development of a customizable fused common tactical picture incorporating tools to support planning, execution, and assessment that will allow commanders the all-domain situation awareness required to make informed and timely decisions. - Continue work to develop and demonstrate new artificial intelligence (AI) systems to automate monitoring and alerting. Research will integrate video analytics with edge processing to create high-throughput detection, classification, and tracking across multiple operational domains. - Continue development and iterative user testing of hands-free situational awareness prototype to support the Joint Targeting and Coordination Handoff System program. - Continue development of a long-range, minimally-manned, expeditionary sensor for austere environments.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate research effort to demonstrate an amphibious operations decision support tool that aggregates, processes, and assimilates surf observation with state-of-the-art data sources to support commander's decision-making. - Initiate research to examine wartime composite repair technologies to support expeditionary operations.					
FY 2027 Base Plans: Continue: - Develop a recommendation engine prototype to adapt strategies based on adversary actions. - Advanced technology development to evaluate operational utility of Artificial Intelligence (AI) and Machine Learning (ML) algorithms to improve decision making; and develop, demonstrate, and experiment with decision aids operating on fused organic sensor data focused on improving decision-making and reducing operator workload during Marine Corps training exercises and operations. - Develop generate synthetic data useful for machine learning while learning and demonstrating how to combine real data from training or operations. - Research development of a customizable fused common tactical picture incorporating tools to support planning, execution, and assessment that will allow commanders the all-domain situation awareness required to make informed and timely decisions, while improving the usability and easy to collect and tailor the data and visualizations. - Research to develop and demonstrate new artificial intelligence (AI) systems to automate monitoring and alerting. Research will integrate video analytics with edge processing to create high-throughput detection, classification, and tracking across multiple operational domains. - Development and iterative user testing of hands-free situational awareness prototype to support the Joint Targeting and Coordination Handoff System program and related activities. Complete: - Development of a long-range, minimally-manned, expeditionary sensor for austere environments. - Research effort to demonstrate an amphibious operations decision support tool that aggregates, processes, and assimilates surf observation with state-of-the-art data sources to support commander's decision-making. - Research to examine wartime composite repair technologies to support expeditionary operations. Initiate: - Design and prototype of a sensing system of systems for Marine tactical units to organically sense to the limits of their tactical fires using a combination of unmannes systems with enhanced sensing capabilities. This					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
incorporates edge processing applicable to detection, classification, and identification of threats in contested environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of an effort to enhance the organic sensing capability of Marine units out to tactical range of long-range fires.					
Title: USMC Future Naval Capabilities	28.125	29.574	31.023	0.000	31.023
Articles:	-	-	-	-	-
Description: This R-2 Activity addresses the advanced technology development associated with the Marine Corps' participation in the Department of the Navy's (DoN) Future Naval Capabilities (FNC) Program. The objective of the work in this Program Element (PE) is to develop promising technologies emerging from the FNC technology candidates funded in PE 0602131M that have been matured to higher Technology Readiness Levels (TRLs). Investments in this activity are coordinated with similar and non-duplicative efforts in PE 0603673N. The FNC Program is structured to accelerate the transition of new technologies to the Fleet and Force. Each effort is assessed for its technology maturity and transition commitment. Funding for FNCs, which have Technology Readiness Levels (TRLs) of 4/5 to 6 and also have transition funding commitments from acquisition Programs of Record, are resourced in this PE 0603640M MC Advanced Technology Demo. Funding for FNC technology candidates at lower TRLs (3 to 4) is resourced in PE 0602131M Marine Corps Landing Force Tech. ONR is working closely with the Resource Sponsors and acquisition stakeholders to develop high priority technological capabilities needed by the operational forces. FNC budget activity (BA) 2 investments develop candidate FNC technologies in an agile fashion by exploiting technology advances that respond rapidly to naval needs. This approach facilitates an optimum response when developing and maturing the technology options that can be developed further in this PE 0603640M MC Advanced Technology Demo. The FNC Program favors a high level of collaboration. Collaboration with the acquisition stakeholders and their resource sponsors is required. A complete accounting of the technology candidates being developed and a full disposition of each technology development effort funded in this PE is provided annually to the Congressional oversight committees.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: Dreamcatcher - Continue this FNC by integrating the Dreamcatcher tactical LOG planner in USMC Marine Air Ground Task Forces Command and Control Android Tactical Assault Kit (ATAK) for Regiment and below users. - Continue to develop analytics to accurately predict tactical and operational demand signals for different classes of supplies while operating in a contested maritime environment. - Continue to Conduct asset-target assignment, contested logistics, and maneuver experimentation at Regiment and below. - Initiate the development of modeling adversary behavior attacking blue forces supply network. Advanced Targeting of Hostile Entities via Networked AI (ATHENA) - Continue development and implementation of new functionality for USMC Command and Control systems. - Continue Concept of Operation and implementation studies for new mission profiles. - Continue Integration into a Modelling and Simulation environment to explore new functionality. - Continue to Perform experimentation in LVC environment to assess algorithms with operational data. Simulation Enhancement And Modernization Suite (SEAMS) - Complete the SEAMS FNC by completing stakeholder engagements with Marine Corps Training organizations on transition plans and exit criteria testing. - Complete advanced prototype development to better integrate operational systems with training systems to support more realistic training with the Marine Corps Project Tripoli / Live Virtual Constructive-Training Environment. - Complete recommendations for solutions to potential issues associated with legacy and Joint Live Virtual Constructive (JLVC) Federation simulators. Stand-off Radar Imaging Detection System (SoRIDS) - Complete integration of electro-optical based wide area detection and automatic target detection algorithm for the UGVs and Unmanned Aerial Vehicle (UAV) systems under various operational speed and height to confirm performance. - Complete development and design of a baseline SoRIDS unit for the UAV and the UGV coordinated data collection and demonstration in relevant environment and deliver to MCSC for initial operational testing.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete the development of hardware support equipment and conducting subcomponent testing and integration of multi-static Ground Penetrating Synthetic Aperture Radar (GP-SAR) systems for Unmanned Ground Vehicles (UGVs). - Complete the development of integrated software and communication system to verify reliability and accuracy of detection/marking/report information federation. - Complete performance testing and validation of the integrated baseline SoRIDS unit with the UAV and UGV with the software and communication systems. Intra-Theater Distribution (ITD) - Initiate the Marine Corps portion of the ITD FNC, in coordination with a more robust Navy effort for this same FNC, by adding unique Marine Corps tactical and operational logistics data requirements to support distribution and sourcing supply chain analyses. - Add unique Marine Corps user interface requirements to support Intra-Theater Distribution. Jackhammer - Initiate affordable UAS interceptor subsystem and system-level preliminary design. - Initiate iterative fabrication of risk reduction prototypes with emphasis on TRL / MRL maturation of key subsystems. - Initiate system / warfighter integration, test, and safety qualification efforts IAW service / platform specific rapid fielding requirements. Azurite - Initiate and complete development of CONOPS for optimal deployment of sensors that support expeditionary operations. - Initiate design of hardware and standards to support command and control of an electromagnetic sensor suite. - Initiate data collection events at USMC field exercises.					
FY 2027 Base Plans: Visual Integrated Tactical Logistics Battle Management Aid (VITL-BMA) (formerly named Dreamcatcher) - Complete transition and deployment of tactical logistics planner in USMC Marine Air Ground Task Forces Command and Control Android Tactical Assault Kit (ATAK) for Regiment and below users. - Complete the merge and enhancement of Transportation Capacity Planning Tool in VITL-BMA to allow USMC to plan and execute all ground movement missions.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete logistics support request capability to send logistics request from handheld unit device to VITL-BMA TAK to Mavan Smart System via unclassified and secret networks. - Complete transition of tactical logistics data and information with TAK plugins to integrate with the MAGTF Command and Control (C2) COP environment that optimizes supply chain actions coupled with fires and maneuvers to generate sustained effects. Advanced Targeting of Hostile Entities via Networked AI (ATHENA) -Complete development and implementation of new functionality for USMC Command and Control systems. -Complete Concept of Operation and implementation studies for new mission profiles. -Complete Integration into a Modelling and Simulation environment to explore new functionality. -Complete final demonstration in LVC environment. -Initiate/Complete FNC transition to PEO-LS, Marine Air Ground Task Force Command & Control (MATF C2) Common Aviation Command & Control System (CAC2S). Intra-Theater Distribution (ITD) - Continue the Marine Corps portion of the ITD FNC, in coordination with a more robust Navy effort for this same FNC, by adding unique Marine Corps tactical and operational logistics data requirements to support distribution and sourcing supply chain analyses. - Continue to develop and Intra-Theater Distribution and sourcing planning and execution within MAGTF Command & Control (C2) and Maven Smart System environment. - Initiate to develop force flow analysis with sustainment distribution modeling to enhance the feasibility of Flexible Deterrent Options (FDOs). - Initiate to modify data model to ingest joint forces and Allied force logistics data to be data-driven feasibility assessments to support operational decision-making. Jackhammer - Continue the Jackhammer FNC by completing the affordable UAS interceptor subsystem and system-level integration design. - Continue the first-article fabrication of risk-reduction interceptor prototypes with emphasis on TRL/MRL maturation of components. - Continue the planning and coordination of live-fire interceptor test and safety qualification efforts IAW service / platform specific rapid fielding requirements. - Initiate the low-SWaP reduction design of the existing state-of-the-art Radio Frequency (RF) seeker					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Azurite - Continue development of the Azurite FNC by completing hardware designs for electromagnetic sensor suite with command and control functions. Build prototype designs and begin characterization. - Continue engagement with USMC field exercises and data collection, now with prototype sensor suite. Defiant Bat - Initiate the multi-band Assured Position, Navigation, & Timing (APNT) resilience as an extension of baseline single-band capability - Initiate the system-level low-SWaP reduction design, of both the front-end array module and back-end processor server hardware. - Initiate the external interface integration design to an existing USMC high value asset. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is primarily due to the in initiation of the Defiant Bat FNC in FY27.					
Title: Logistics	10.344	0.200	10.300	0.000	10.300
Articles:	-	-	-	-	-
Description: This activity investigates the practical discipline and real world application of the deployment, sustainment, reconstitution, and re-deployment of forces engaged in expeditionary operations. Logistics replaces mass with assured knowledge and speed, is equally capable ashore or afloat in austere environments, and is fully scalable to meet uncertain requirements. This includes efficient and responsive force sustainment, planning and directing logistics operations, logistics demand reduction, fleet maintenance, and expeditionary energy. Expeditionary Energy enhances combat capability of expeditionary warfighters by increasing the efficiency and effectiveness of energy production, storage, distribution and use. Beyond traditional energy efforts, this portfolio also looks at other issues, including energy-efficient behaviors and hybridization of energy sources. These pillars are thoroughly integrated and perpetually related in execution.					
FY 2026 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to advance the broad range of technologies to demonstrate the military utility of enhancing combat capability by increasing energy production, storage, distribution, and curbing energy consumption of the individual Marine and other tactical assets with a particular emphasis on supporting distributed operations. - Continue development of adaptive morphing materials that allow for tire overall stiffness control in less than three minutes. - Complete a research effort to research and develop solutions for safe and effective integration of Lithium-ion 6T batteries into soon-to-field energy storage platforms. - Complete to design and deliver a full-scale autonomy-ready system consisting of an Unmanned Surface Vessel (USV) capable of towing logistics. The effort will also demonstrate integrated system at-sea in required sea-state conditions. - Complete Navy and US Marine Corps development of class of supply III (fuel) and V (munitions) dynamic calculators into a common data framework. - Initiate testing and demonstration of mission planning tactical logistics predictive and analytic tools at fleet exercises.					
FY 2027 Base Plans: Continue: - Development of adaptive morphing materials that allow for tire overall stiffness control in less than three minutes. - Testing and demonstration of mission planning tactical logistics predictive and analytic tools at fleet exercises. Complete: - Research to advance the broad range of technologies to demonstrate the military utility of enhancing combat capability by increasing energy production, storage, distribution, and curbing energy consumption of the individual Marine and other tactical assets with a particular emphasis on supporting distributed operations. Initiate: - Advanced research development for distributes acoustic sensing efforts tailored to unique expeditionary threat detection applications. - Next-generation fuel cell technology to enable record unmanned aerial system flight persistence and increased payload capacity.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of (1) advanced research development to distribute acoustic sensing efforts tailored to expeditionary threats and (2) next-generation fuel cell technology to enable record unmanned aerial system flight persistence and payload capacity.					
Title: Maneuver	9.275	6.323	11.700	0.000	11.700
Articles:	-	-	-	-	-
Description: This activity investigates new ways and means to land forces and material through contested sea-land surface interfaces and then conduct maneuver warfare. In order to enable future Amphibious Operations, research efforts will support autonomous operations across the sea-surf-ground environment, enhanced speed and maneuverability of amphibious vehicles, amphibious vehicle technologies, water performance, and amphibious payloads to change the dynamics of a surface amphibious assault. This includes the emergence of manned-unmanned teaming and autonomous vehicle collaboration. The technologies included in this work address areas of mobility, materials, propulsion, signature reduction, modularity, and unmanned systems. This also encompasses navigating the surf zone by a small autonomous vehicle, navigating negative obstacles on land at speed, overcoming adversarial intent, and developing low-cost robotic autonomy kits to support of expeditionary amphibious operations (e.g., ISR, mine-counter-measures, breaching, fire support, and logistics). ***FY 2026 Plans:*** - Continue development of advanced intelligent mobility technologies for ground and amphibious platforms to improve mobility and maneuverability across littoral and inland terrain. Demonstration platforms will continue to be utilized to assess potential future capabilities. - Continue to expand on efforts related to the development of unmanned swarming ground and amphibious platforms and formations with enhanced autonomy capabilities and utilization and demonstration of advanced payloads for future operations. Conduct experimentation to understand feasibility and utility for military applications. - Continue the development of advanced drivetrain technologies, system designs, and platforms to assess capability of future military tactical truck systems to improve fuel efficiency, extend range, reduce greenhouse gases, and provide onboard auxiliary power and energy.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue research effort to conduct a series of operational analysis and experiments to rapidly advance technologies in select focus areas related to littoral maneuver into the hands of Marines to evaluate military utility. - Continue the integration and field testing of AI-enabled autonomy Command and Control - Continue research into new small unmanned aerial systems capable of maneuvering and directly supporting maneuvering ground forces. - Complete research info a high reliability and high efficiency electronic architecture for small, expeditionary unmanned vessels to meet extended endurance goals with limited maintenance demands. ***FY 2027 Base Plans:*** Continue: - Develop advanced intelligent mobility technologies for ground and amphibious platforms to improve mobility and maneuverability across littoral and inland terrain. Demonstration platforms will continue to be utilized to assess potential future capabilities. - Develop unmanned swarming ground and amphibious platforms and formations with enhanced autonomy capabilities and utilization and demonstration of advanced payloads for future operations. Conduct experimentation to understand feasibility and utility for military applications. - Development of advanced drivetrain technologies, system designs, and platforms to assess capability of future military tactical truck systems to improve fuel efficiency, extend range, reduce greenhouse gases, and provide onboard auxiliary power and energy. - Research effort to conduct a series of operational analysis and experiments to rapidly advance technologies in select focus areas related to littoral maneuver into the hands of Marines to evaluate military utility. - Integrate field testing of AI-enabled autonomy Command and Control. - Conduct research on new small unmanned aerial systems capable of maneuvering and directly supporting maneuvering ground forces. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to increased investments in research to (1) Develop advanced intelligent mobility technologies for amphibious platforms to improve mobility and maneuverability across littoral and inland terrain, (2) integrate field testing of AI-enabled autonomy Command and Control and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2223 / *Marine Corps ATD*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
(3) conduct research on new small unmanned aerial systems capable of maneuvering and directly supporting maneuvering ground forces.					
Accomplishments/Planned Programs Subtotals	99.463	86.304	116.336	0.000	116.336

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603640M / *MC Advanced Technology Demo*	Project (Number/Name) 2297 / *Futures Directorate*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2297: *Futures Directorate*	0.000	131.540	218.206	166.264	-	166.264	125.166	124.776	126.135	127.916	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) is to examine future operating environments to generate threat-informed operating concepts and capabilities and, through experimentation, provide analytically supported recommendations to inform future force design and development activities. The Deputy Commandant, Combat Development and Integration (DC, CD&I) is the United States Marine Corps (USMC) advocate for Science and Technology (S&T). MCWL's Commanding General (CG) is the proponent of USMC S&T and serves as the USMC Executive Agent for Marine Corps S&T. The MCWL/FD also serves as the Marine Corps' liaison to the Joint Staff for Joint Concept Development and Experimentation; thereby, facilitating service-specific experiments as well as participation in joint service experimentation.

As reflected in strategic guidance, expeditionary forces will provide an ever-ready quick strike force to protect United States (US) interests. MCWL/FD pursues concepts, capabilities, and solutions to ensure that Marines of the future force will be effectively organized, trained, and equipped to win across the range of military operations in an uncertain and complex environment. Prioritized investments in S&T are necessary to enable the future Marine Corps and maintain a technological advantage over our adversaries.

This project is organized into 6 activities, the core of which are represented by the Warfighting Capability Areas of the Marine Air-Ground Task Force (MAGTF). The project emphasizes development and demonstration of advanced technology capability concepts, and the examination of their operational application and military utility in the context of formal wargames, Modeling, Simulation, and Analysis (MS&A), and live-force field experimentation with Marines. This operational experimentation directly supports Marine Corps combat development to inform future capability requirements and optimize the acquisition process.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Combat Service Support (CSS) and Force Protection	47.805	35.329	43.906	0.000	43.906
Articles:	-	-	-	-	-
Description: This activity includes Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) Combat Service Support and Force Protection experimentation efforts, to include overarching experimentation planning/execution, management, technical, and engineering support, assessment of equipment, new Tactics, Techniques, and Procedures (TTPs), training opportunities, and proposed organizational changes associated with enhanced capabilities. This activity develops technology in support of a more distributed technologically advanced force, increasing range, effectiveness, sustainability, and survivability of the Marine Corps Air-Ground Task Force (MAGTF). Most programs listed below are considered major (valued at $500K or more) or have near					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
real-time operational impact. Investments in this activity are conducted under the Thrust Areas of Expeditionary Logistics, Expeditionary Medical, Force Protection, or Autonomy and Robotics. ***FY 2026 Plans:*** Unmanned Logistics and Defense: - Continue development and experimentation with highly autonomous and synchronous logistics capabilities. - Continue to assess execution of high tempo unmanned sustainment to dispersed and disaggregated forces during joint combined air-ground operations in contested environments. Sustainment: - Complete demonstrations with naval logistics information technology integration with low earth orbit and military satellite networks. - Complete research, design, and build of a littoral maneuver enabler prototype. - Complete sustainment and investigations into selected technologies integrated within the MAGTF to experiment with hybrid energy and small unit water purification. - Continue to sustain and investigate multiple technologies integrated within the MAGTF to experiment with alternate vehicle power, extended mobility, and expeditionary fuel distribution to enable logistics demand reduction and provide alternate sustainment to the MAGTF at all levels. - Initiate investigations into atmospheric water generation; a process that extracts water from humid ambient air, producing potable water. Counter Unmanned Aerial System (CUAS): - Continue a comprehensive experimentation plan to successfully execute an end-to-end kill chain for developed CUAS capabilities. Focus area includes dismount-capable CUAS architecture to provide force protection and friend-from-foe identification model-building development efforts. Explosive Detection/Defeat: - Complete development of an autonomous explosive detection and defeat capability; integrating specialized sensors for enhanced neutralization. - Complete spiral technology development to produce a mobile explosive hazard in-depth defense. - Initiate explorations into alternative explosive detection and defeat capabilities, focusing efforts on the surf-zone.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Medical: - Continue to experiment with systems to support a smaller, modular, multifunctional medical concept that can support medical care ashore and within MLRs by performing studies, integration with unmanned systems, demonstrations, and experimentation. Focus area includes providing prolonged care for multiple casualties while enroute. Warfighter Performance: - Continue to provide increased lethality and mobility to the warfighter through the integration of technology directly attributable to individual combat equipment. Focus area includes development of an advanced situational awareness sensor network to aid in digital kill-web acquisitions. - Continue to develop, test, assess, and experiment with a Radio Agile Integrated Device (RAID) Plate; a single operator-worn device that facilitates simultaneous control of unmanned ground, air, and surface platforms. - Continue development of common user interface and fully integrated Primary, Alternate, Contingency, Emergency (PACE) plan for dismounted troops. Littoral Connectors: - Continue development and enhancement of capabilities for diversified distribution, providing risk worthy, inexpensive platforms for maneuver and sustainment distribution. Utilize current commercial technology to enhance maneuver to and from seabases and expeditionary advanced bases in the littorals with the ability to deliver directly to the users at shore. Focus areas include undergoing detailed engineering design as well as conducting limited technical assessments (LTAs), Foreign Comparative Testing (FCT), and experimentation. - Continue assessments, evaluations, and experimentation with the Navy and Fleet Marine Forces to inform future naval surface vessel requirements, develop TTPs, and refine Distributed Maritime Operations (DMO)/ Expeditionary Advanced Base Operations (EABO) concept of operations (CONOPS), pertaining to Force Design 2030 and the activation of MLR units. - Continue assessments, evaluations, and experimentation with small boats to augment littoral maneuver capability in support of Force Design 2030. Robotic Modernization: - Continue to provide ground combat element robotic asset maintenance, repair, and upgrades; ultimately ensuring systems viability for experimentation and user evaluation. Camouflage, Concealment, and Detection (CC&D):					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue the development of CC&D capabilities. Integrated Air and Missile Defense: - Continue development of passive and active methods to detect, track, and identify air threats.					
FY 2027 Base Plans: Unmanned Logistics and Defense: - Continue development and experimentation with highly autonomous and synchronous logistics capabilities. Focus areas include development, testing, and experimentation with a semi-submersible craft designed to support a payload of 8 to 10 tons. - Continue to assess execution of high tempo unmanned sustainment to dispersed and disaggregated forces during joint combined air-ground operations in contested environments. Sustainment: - Continue to sustain and investigate multiple technologies integrated within the MAGTF to experiment with alternate vehicle power, extended mobility, and expeditionary fuel distribution to enable logistics demand reduction and provide alternate sustainment to the MAGTF at all levels. Focus areas include providing a logistics over-the-shore (LOTS) capability tailored to agile, low-signature, minimally manned logistics operations in austere environments. - Complete investigations into atmospheric water generation. Counter Unmanned Aerial System (CUAS): - Continue comprehensive experimentation plan to successfully execute an end-to-end kill-web for developed CUAS capabilities. Focus area includes an integrated Detect-Defeat-Destroy CUAS network that provides threat data to the lowest echelon to increase reaction time and survivability. Explosive Detection/Defeat: - Continue explorations into alternative explosive detection and defeat capabilities. Medical: - Continue to experiment with systems to support a smaller, modular, multi-functional medical concept. Focus area includes conducting large-scale experiments on providing prolonged care for multiple casualties during transport.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Warfighter Performance: - Continue to provide increased lethality and mobility to the warfighter through the integration of technology directly attributable to individual combat equipment. Focus area includes providing a battalion and below communications architecture that enables position location information (PLI) tracking, down to the Fire Team level and digital targeting, directly linking sensors to shooters. - Continue to develop, test, assess, and experiment with a RAID Plate. - Continue development of common user interface and fully integrated PACE plan for dismounted troops. Littoral Connectors: - Continue development and enhancement of capabilities for diversified distribution, providing risk worthy, inexpensive platforms for maneuver and sustainment distribution. Focus areas include limited technical assessments and experimentation with a heavy shore-to-shore roll-on/roll-off stern-landing beach landing vessel. - Continue assessments, evaluations, and experimentation with the Navy and Fleet Marine Forces to inform future naval surface vessel requirements, develop TTPs, and refine DMO/EABO CONOPS. Focus areas include limited technical assessments and experimentation with a shore-to-shore roll-on/roll-off bow-landing craft. - Continue assessments, evaluations, and experimentation with small boats to augment littoral maneuver capability. Robotic Modernization: - Continue to provide ground combat element robotic asset maintenance, repair, and upgrades; ensuring systems viability for experimentation and user evaluation. Camouflage, Concealment, and Detection (CC&D): - Continue development (to include investigations into and experimentation) with CC&D capabilities. Integrated Air and Missile Defense: - Continue development of passive and active methods to detect, track, and identify air threats. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding increase from FY 2026 to FY 2027 is attributed to the re-vitalization of Littoral Connector efforts, specifically related to assessments, evaluations, and experimentation with a shore-to-shore roll-on/roll-off bow-landing craft.					
Title: Fires, Targeting, and Maneuver	4.844	120.859	6.379	0.000	6.379
Articles:	-	-	-	-	-
Description: This activity includes Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) experimentation efforts in the areas of fires, targeting, and maneuver, to include overarching experimentation planning/execution, management, technical, and engineering support, assessment of equipment, new Tactics, Techniques, and Procedures (TTPs), training programs, and proposed organizational changes associated with enhanced capabilities. This area increases fires, targeting, and maneuver related troop environmental awareness, lethality, and mobility using fused sensors as well as unmanned weaponized and reconnaissance air and ground vehicle platforms to support experimentation. Most programs listed below are considered major (valued at $500K or more) or have near real-time operational impact. Investments in this activity are conducted under the Thrust Areas of Marine Air-Ground Task Force (MAGTF) Fires, Maneuver, and Autonomy and Robotics.					
FY 2026 Plans: Unmanned Ground Vehicle (UGV): - Continue to provide a multi-purposed UGV, with modular payload architectures. Efforts focus on a fully autonomous UGV that can provide long-range land movement and wet-gap crossing, satisfying full mission sets such as communications relay, armed reconnaissance, and logistics resupply. - Continue to integrate POR and non-POR payloads for the UGV platform that enhance dismounted units across the warfighting functions. - Continue to perform tests, demonstrations, and assessments prior to dedicated live-force experimentation. Aerial Munitions: - Complete experimentation with fully autonomous, remotely operated UASs that serves as a dual day and night, precision-guided, loitering munition designed to seek, locate, and engage selected targets. - Complete development of a common launcher system that can be integrated onto ultra-light and autonomous vehicles. - Complete tasks to integrate existing weapons technology into a single killer munition. - Continue to pursue company level precision guided munitions.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Multi-Domain Fires: - Complete the incorporation of POR C2 infrastructure with modified long-range aerial munitions. - Complete small unmanned close air support efforts. - Complete organic sensor-to-shooter data that expedites the targeting process. - Complete the demonstration and experimentation of a small form factor hypersonic capability in support of an expeditionary concept of operation. - Complete development and experimentation of an all-weather, extended range indirect fires capability compatible with any unit utilizing the 81mm mortar system. - Continue the examination and testing of precision guided munitions. Efforts include the development of a small form factor, cost-effective, long range missile capability to support an expeditionary concept of operation. In addition, demonstrate an affordable, precision guided, extended range, dual mode mortar round capable of exceeding ranges of 20+ kilometers. - Initiate large scale experimentation of low-cost munitions.					
FY 2027 Base Plans: Unmanned Ground Vehicle (UGV): - Continue to provide a multi-purposed UGV, with modular payload architectures. - Continue to integrate POR and non-POR payloads for the UGV platform that enhance dismounted units across the warfighting functions. - Continue to perform tests, demonstrations, and assessments prior to dedicated live-force experimentation. Aerial Munitions: - Continue to pursue company level precision guided munitions. Multi-Domain Fires: - Continue the examination and testing of precision guided munitions. - Complete large-scale experimentation of low-cost munitions.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The funding decrease from FY 2026 to FY 2027 is directly attributable to completing Multi-Domain Fires related low-cost munitions large-scale experimentation. Project has successfully transitioned to Budget Activity 4 - 0604320M - Marine Corps Rapid Prototyping Capability.					
Title: Marine Air-Ground Task Force (MAGTF) Command, Control, Communications, and Computers (C4)	7.996	2.900	5.420	0.000	5.420
Articles:	-	-	-	-	-
Description: This activity encompasses all Marine Corps Warfighting Laboratory/Futures Directorate (MCWL/FD) Command, Control, Communications, and Computers (C4) experimentation efforts, to include overarching experimentation planning/execution, management, technical, and engineering support, assessment of equipment, new Tactics, Techniques, and Procedures (TTPs), training programs, and proposed organizational changes associated with enhanced C4 capabilities. The area provides cutting edge/enhanced Over-The-Horizon (OTH), Beyond Line of Sight (BLOS), satellite and non-satellite based C4 capabilities to support experimentation. Programs listed below are considered major (valued at $500K or more) or have near real-time operational impact. Investments in this activity are conducted under the Thrust Areas of Command, Control, Communications, and Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Cyber/Electronic Warfare (Cyber/EW).					
FY 2026 Plans: Asymmetric Command and Control (C2): - Complete efforts to provide and assess secure "one-to-many" (netted) PTT voice and C4 data services to disadvantaged users with no reliance on local ground infrastructure. - Complete mission play-back capabilities for enhanced analysis and training. - Complete development and limited technical assessments with an expeditionary transportable communications platform. - Complete mini-crypto development. Integrated C2: - Continue experimentation with an expeditionary transportable communications platform. - Continue development of persistent satellite communications (SATCOM) point-of-presence to enable Expeditionary Advanced Base (EAB), Distributed Maritime Operations (DMO), and Joint All-Domain C2 (JADC2) experimentation. - Continue integration of a proliferated-Low Earth Orbit (pLEO) satellite constellation capability which will facilitate connectivity to elements of the Family of Integrated Targeting Cells (FITC) and other pLEO enabled					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
platforms and agencies. Focus on enabling multi-domain communications by bridging legacy and emerging technology for distributed units. Electronic Warfare (EW) / Information Environment Operations: - Complete development and integration of an airborne EW/Signals Intelligence (SIGINT) radio frequency sensor that is optimized for Group 2 - 3 unmanned aerial systems (UAS) deployment. - Complete experimentation with a cyber application of swarmable, autonomous UASs. - Continue to pursue multiple electronic and cyber-secure warfare efforts. - Continue the integration of a full-spectrum SIGINT and EW capability onto Group 5 UAS. Focus area includes passive auto-SIGINT system efforts that conduct communications and electronics intelligence. - Continue the development of a resilient, cyber-secure high-performance network within the littorals. - Continue a Size, Weight, and Power (SWAP) analysis on an advanced High Frequency (HF) Radio Frequency (RF) signal processing and emitter exploitation. Focus area includes investigations into a passive HF spectrum collector tool that facilitates the understanding of the propagation environment.					
FY 2027 Base Plans: Integrated C2: - Continue experimentation with an expeditionary transportable communications platform. Focus areas include providing disadvantaged units with an organic, persistent capability to receive, process, and disseminate digital information from organic sensors which provide connectivity to relevant/actionable target information. - Continue development of persistent SATCOM point-of-presence to enable EAB, DMO, and JADC2 experimentation. - Continue integration of a pLEO satellite constellation capability which will facilitate connectivity to elements of the FITC and other pLEO enabled platforms and agencies. - Initiate investigations into the ability to disseminate and share track and target data between joint, coalition, and allied partners at the tactical level. Electronic Warfare (EW) / Information Environment Operations: - Continue to pursue multiple electronic and cyber-secure warfare efforts. Focus areas include offensive and defensive capabilities as well as payload technologies. - Continue the integration of a full-spectrum SIGINT and EW capability onto Group 5 UAS. Focus area includes providing a passive autonomous (auto)-SIGINT system that conducts communications and electronics intelligence on a UAS.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue a SWAP analysis on an advanced HF RF signal processing and emitter exploitation. - Complete development of a resilient, cyber-secure high-performance network within the littorals. - Initiate development of Group 2 and Group 3 RF sensors with antennas. Efforts include the completion of platform integration kits for software defined radio cyber UAS payloads. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2025 to FY 2026 is directly attributable to Integrated C2 efforts, specifically the initialization of investigations into the ability to disseminate and share track and target data between joint, coalition, and allied partners at the tactical level.					
Title: Marine Air-Ground Task Force (MAGTF) Intelligence, Surveillance, and Reconnaissance (ISR)	16.508	13.919	28.824	0.000	28.824
Articles:	-	-	-	-	-
Description: This activity includes Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) Intelligence, Surveillance and Reconnaissance (ISR) related experimentation efforts, to include overarching experimentation planning/execution, management, technical, and engineering support, assessment of equipment, new Tactics, Techniques, and Procedures (TTPs), training programs, and proposed organizational changes associated with enhanced ISR capabilities. Using a variety of fused sensors to mesh data, video, and images and incorporating a common tactical controller to operate multiple air and ground ISR platforms, this area enhances small unit situational awareness as well as exploitation and forward engagement ability via experimentation. Programs listed below are considered major (valued at $500K or more) or have near real-time operational impact. Investments in this activity are conducted under the Thrust Areas of Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and Autonomy and Robotics. ***FY 2026 Plans:*** Unmanned Aerial Systems (UASs): - Complete testing and demonstrating a heavy fuel engine to expand Department of the Navy (DoN) organic ship-board operations. - Continue to explore, expand mission sets, and exploit the tactical potential of small UASs across multiple Marine Corps domains. - Continue to explore Group 2 fixed wing and vertical take-off-and-landing (VTOL) payload development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue efforts to provide a highly automated/autonomously operated cargo drone that supports organic resupply via an aerial cargo vehicle. - Continue specialized payload development for Group 2 and 3 UAS organic to tactical units for extended endurance, increased lethality, and developmental testing. Focus on the development and testing of payload/ sensor combinations optimized for maritime ISR and target acquisition. In addition, evaluate ISR capabilities at relevant distances. Robotic Autonomous Command and Control (C2): - Complete investigation and experimentation with enabling technologies combining sensor and telemetry data from multiple unmanned platforms. Fused Integrated Networking: - Continue development and experimentation using an aerial communications gateway platform. Focus on extending and closing kill-webs for distributed units and enabling resilient communications in spectrum contested/denied environments. Information Operations: - Continue to develop and enhance capabilities to increase situational awareness and influence decision making. - Continue to investigate technologies and experimentation opportunities to support the operational utility of artificial intelligence/machine learning algorithms. Artificial Intelligence (AI): - Continue to leverage joint Component investments to provide/promote AI support/use for MCWL concept-based experimentation, specifically investigating a dynamic, modular, AI-powered joint targeting systems designed to enhance efficiency and effectiveness of military operations. Space: - Continue to develop capabilities to conduct electronic warfare in support of MAGTF operations. - Continue the construct and experimentation of integrated targeting cells. - Continue investigations to search and receive messages transmitted outside standard frequency assignments and forward to deployed forces within the Expeditionary Advanced Base Operations (EABO) construct. - Continue Family of Integrated Targeting Cells (FITC) development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue developmental efforts to support redundant command and control in contested and degraded environments. - Continue investigations, demonstrations, and experimentation of proliferated Low Earth Orbit (LEO) communications as well as support the integration of C2 architectures onto multiple expeditionary platforms. - Initiate the development of transit-cased variant of FITC capabilities. Intelligence Community Directive 705 (ICD-705): - Complete experimentation of temporary ICD-705 solutions to support the forward edge in the convergence of operations and intelligence across multiple levels of classification in support of the FITC.					
FY 2027 Base Plans: Unmanned Aerial Systems (UASs): - Continue to explore, expand mission sets, and exploit the tactical potential of small UASs across multiple Marine Corps domains. Focus areas include lethality development. - Continue to explore Group 2 fixed wing and VTOL payload development. - Continue efforts to provide a highly automated/autonomously operated cargo drone that supports organic resupply via an aerial cargo vehicle. - Continue specialized payload development for Group 2 and 3 UAS organic to tactical units for extended endurance, increased lethality, and developmental testing. Focus areas include platform development and integration of UAS sub-systems into a FITC to close kill chains across the Coalition, Joint and Naval Kill Webs. Efforts will provide full end-to-end integration and flight demonstration of objective Group 3 ISR capability to inform Organic Group 3 ISR requirements. Robotic Autonomous Command and Control (C2): - Re-initiate investigations into providing a de-centralized multi-unmanned system (UxS) (air, ground, surface) manager, enabling UxSs to act collaboratively within and across domains and team with manned operations. Focus areas include integration of multi-function payloads as well as gear development. - Initiate development of an autonomous turret for a ground vehicle that will use AI object detection/recognition software and weapons engagement algorithms. Efforts include generator integration, field ranger testing, Weapon Systems Explosive Safety Review Board (WSESRB) approval, and payload development. Fused Integrated Networking: - Continue development and experimentation using an aerial communications gateway platform.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Information Operations: - Continue to develop and enhance capabilities to increase situational awareness and influence decision making. Focus areas include providing a dynamic, modular, AI-powered joint targeting system and battle management command and control (C2) system designed to enhance efficiency and effectiveness in military operations by streamlining decision-making and resource allocation across the kill-chain in high-intensity conflicts. - Continue to investigate technologies and experimentation opportunities to support the operational utility of artificial intelligence/machine learning algorithms. Artificial Intelligence (AI): - Continue to leverage joint Component investments to provide/promote AI support/use for MCWL concept-based experimentation. Space: - Continue to develop capabilities to conduct electronic warfare in support of MAGTF operations. - Continue the construct and experimentation of integrated targeting cells. - Continue FITC development to enhance the tactical-national interfaces that can support the over-the-horizon awareness, identification, and targeting in stressing environments. Prototypes will demonstrate tactical and resilient networking and processing capabilities that can work with national, commercial, and in-theater tactical feeds to increase capabilities operating at the tactical edge. - Continue investigations, demonstrations, and experimentation of proliferated LEO communications as well as support the integration of C2 architectures onto multiple expeditionary platforms. - Continue the development of transit-cased variant of FITC capabilities. - Complete investigations to search and receive messages transmitted outside standard frequency assignments and forward to deployed forces within the EABO construct. - Complete developmental efforts to support redundant command and control in contested and degraded environments. - Initiate development of a resilient, high-bandwidth communication system that leverages laser-based free-space optical links to ensure reliable connectivity in denied, degraded, intermittent, or limited (DDIL) environments.					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The funding increase from FY 2026 to FY 2027 is mainly attributable to increased investments in Unmanned Aerial Systems (UASs) development and integration and Space related developmental efforts.					
Title: Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) Technical, Engineering, and Management Support ***Articles:*** ***Description:*** Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) Technical, Engineering, and Management Support efforts include lab-wide, non-program specific experimentation doctrine, planning, management, and technical/engineering support, as well as technology transition tracking efforts. Tasks listed below are considered major (valued at $500K or more) or have near real-time operational impact. ***FY 2026 Plans:*** Technical Support: - Continue to provide a full range of overarching, lab-wide, engineering, analytical, technical, management, and business services; directly related to live-force experimentation. Tasks include Portfolio Analytics; a continued exploration of AI capabilities to streamline data collection and program presentation, facilitating informed rapid decision-making and strategic planning. - Initiate efforts to increase security protocols as a direct result of increased program classifications. Efforts include the latest technologies, methodologies, recommended policies, procedures, and practices for MCWL to utilize in support of Force Design 2030. - Initiate efforts to broaden information systems support within cyber and general service areas to computer systems required to plan, execute, and evaluate experimentation programs. Efforts ensure compliance with Department of War (DoW), Secretary of the Navy (SecNav), and Marine Corps Order (MCO) regulations regarding the maintenance and upkeep of computer systems housing classified information. Collaboration: - Continue to provide a laboratory facility to co-locate experimentation designers/implementers with project teams and technologists to enhance effectiveness of experimentation design, development, implementation, reporting, prototyping, and outreach of results. Effort seeks to facilitate communication, problem solving, risk mitigation, and status reporting in the execution of MCWL's science and technology (S&T) projects at all classification levels.	22.322 -	24.214 -	23.928 -	0.000 -	23.928 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Establish a co-located laboratory facility to integrate operational projects in direct support of experimentation goals. Strategies include modeling and simulation; analysis and advisory services; concepts and plans activities; and experimentation development, execution, and analysis efforts. Efforts seek to facilitate enhanced inter-MCWL communications, problem solving, risk mitigation, and status reporting at all classification levels. ***FY 2027 Base Plans:*** Technical Support: - Continue to provide a full range of overarching, lab-wide, engineering, analytical, technical, management, and business services; directly related to live-force experimentation. Focus areas include liaison with Fleet counterparts to identify operational shortfalls and requirements that need to be fulfilled by technology solutions and provide recommendations on technology integration and operational requirements at all levels of security. - Continue security protocol functions. - Continue information systems support. - Initiate efforts to better generate, manage, and leverage information and knowledge to improve internal messaging, external engagement with the Fleet, and support Force Design 2030 initiatives. Collaboration: - Continue to provide a laboratory facility to co-locate experimentation designers/implementers with project teams and technologists to enhance effectiveness of experimentation design, development, implementation, reporting, prototyping, and outreach of results. - Continue to provide a co-located laboratory facility to integrate operational projects and functions in direct support of experimentation goals. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant change between overall FY 2026 and FY 2027 funding levels.					
Title: Warfighting Excellence	32.065	20.985	57.807	0.000	57.807
Articles:	-	-	-	-	-
Description: This activity includes Marine Corps Warfighting Laboratory / Futures Directorate (MCWL/FD) efforts in the development and assessment of joint and service warfighting concepts, joint and service missions, analysis of emerging threats and opportunities, and joint capability experimentation. It also includes MCWL/FD service experimentation (to include planning and analysis) in areas that impact multiple warfighting functions.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Programs listed below are considered major (valued at $500K or more) or have near- real-time operational impact. ***FY 2026 Plans:*** Wargaming: - Transition planning, coordination, and execution of specified wargames. Efforts include formal reporting of analytical and assessment results which may lead to identification of wargame results for further exploration through modeling and simulation (M&S), live-force experimentation, doctrine and/or policy review, science and technology examination, and studies. - Continue to sustain the WarNet stand-alone network. This provides the ability to conduct classified wargames "on the road", outside of the Marine Corps' Robert B. Neller Center for Wargaming and Analysis, until such time as the Neller Center reaches Full Operational Capability and can sustain this functionality. Emerging Threats and Opportunities: - Continue to assess and analyze the future security environment; identify and analyze emerging threats; and develop and appraise promising concepts, opportunities and technologies. Support will include research and development of innovative operational and organizational concepts and approaches that emphasize flexible, expeditionary capabilities across a broad spectrum of possible employment options. - Continue to provide a full spectrum of broad-based technological and analytical support for the Marine Corps combat development and experimentation programs at the component, Service, and Joint levels. Joint Concept Technology Demonstrations (JCTDs): - Complete development of a net-enabled, cost effective, long-range precision munition employed from rotary wing aircraft in expeditionary and maritime environments. - Continue to monitor and contribute to approved efforts that address joint and combatant command warfighting needs through the execution and demonstration of near-term prototypes. - Continue explorations into joint efforts that supplement force design initiatives. - Initiate explorations into a unique prototype unmanned surface vehicle (USV) that does not have the traditional structure above the waterline, leaving room for alternative configurations and could be used for logistics in a contested environment. Exercise Support:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue multi-year effort to enhance the ability of the MAGTF. Focus area includes employment of concepts and integration of material solutions/capabilities. - Continue Marine Littoral Regiment (MLR) experimentation efforts. Focus areas include evaluation of the joint force capability to converge effects against a peer adversary. Innovation: - Continue to develop/conduct/refine warfighter driven challenges to develop/identify prototypes and foster innovation within the Marine Corps. Focus areas include Virtual Stand-in-Force explorations; small, lethal forces with the ability to move quickly, communicate securely, and stay hidden from the enemy as well as networking capabilities to allow for secure secret transmissions during experimentation. - Continue to reach out to the fleet in a collaborative effort to analyze future capabilities and provide capability development data. Integrate emergent technologies into experimental venues to assess feasibility. Modeling, Simulation, and Analysis: - Continue to investigate/use emerging M&S tools and techniques. Continue to provide analytical modeling and data-driven, evidence-based assessments. Continue to develop Marine Corps operating concepts and deliver Strategic Analysis products in order to guide force development activities. - Continue to provide M&S of naval operations, focusing on the Pacific Theater. - Continue to provide independent, unique, and comprehensive analytical expertise to facilitate and evaluate experiments in various warfighting areas. Experimentation Opposition Force: - Continue to demonstrate the abilities of a live adversary force, focusing on strategic-level red-cell force considerations. Information Fusion Center (IFC): - Continue to provide a consolidated and collaborative environment, allowing the Marine Corps to successfully initiate, inform, and develop key capabilities at all classification levels.					
FY 2027 Base Plans: Wargaming: - Continue to sustain the WarNet stand-alone network to maintain the ability to conduct classified wargames "on the road".					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete transition of principal wargaming functions to the sponsorship of the Marine Corps' Robert B. Neller Center for Wargaming and Analysis. This includes overall wargaming planning, coordination, execution, analysis, and reporting functions. - Initiate accelerated integration of Joint-Force software, to execute next-generation wargaming and modeling and simulation in the Marine Corps' Wargaming and Analysis Center. Emerging Threats and Opportunities: - Continue to assess and analyze the future security environment; identify and analyze emerging threats; and develop and appraise promising concepts, opportunities and technologies. - Continue to provide a full spectrum of broad-based technological and analytical support for Marine Corps combat development and experimentation programs. This includes provisioning appropriate subject matter expertise to address specific issues of concern. Joint Concept Technology Demonstrations (JCTDs): - Continue to monitor and contribute to approved efforts that address joint and combatant command warfighting needs through the execution and demonstration of near-term prototypes. - Continue explorations into joint efforts that supplement force design initiatives. - Continue explorations into a unique prototype USV that does not have the traditional structure above the waterline. - Initiate efforts to deliver expeditionary logistics in a contested and Anti-Access/Area Denial (A2/AD) operational environment. Existing logistics pathways are static, large, require large numbers of human resources, transmit critical logistics capabilities to the adversary, and are susceptible to disruption through adversary action. This capability will allow the traverse of offloaded supplies across the waterline and off the beach without requiring vehicle recovery and/or beach reset operations. Exercise Support: - Continue multi-year effort to enhance the ability of the MAGTF. - Continue MLR experimentation efforts. - Initiate experimentation focused on mobile maritime reconnaissance activities. Focus areas include enhancing maritime domain awareness, facilitating the application of joint fires, and providing tactical-level capability to maneuver teams across challenging open water gaps. Innovation:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Transition Virtual Stand-in-Force developments. - Continue to conduct and refine warfighter driven challenges to develop/identify prototypes and foster innovation within the Marine Corps. Focus areas include enabling distributed experimentation, wargaming, and analysis while providing a real-time feedback and human in-the-loop interaction with Program of Record (POR) combat systems. - Continue to reach out to the fleet in a collaborative effort to analyze future capabilities and provide capability development data. Efforts include live, virtual, constructive experimentation. - Initiate enhancements to oversight, processes, and functional integration to strengthen management and decision-making capabilities. These efforts, both directly and indirectly, facilitate and support experimentation and innovation. Modeling, Simulation, and Analysis (MS&A): - MS&A Continue to investigate/use emerging M&S tools and techniques. Continue to provide analytical modeling and data-driven, evidence-based assessments. - Continue to provide M&S of naval operations, focusing on the Pacific Theater. - Continue to provide independent, unique, and comprehensive analytical expertise to facilitate and evaluate experiments in various warfighting areas. - Complete specialized Marine Corps operational concept development and delivery of Strategic Analysis products. Experimentation Opposition Force: - Continue to explore strategic-level red-cell force considerations. Information Fusion Center (IFC): - Continue to provide a consolidated and collaborative environment at all classification levels. Efforts augment overall Marine Corps effectiveness as well as MCWL's experimentation objectives.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The funding increase from FY 2026 to FY 2027 is directly attributable to the accelerated integration of Joint-Force software at the Marine Corps Wargaming and Analysis Center, enabling the execution of next-generation wargaming that is driven by and directly accountable to our unique operational requirements. the resulting					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2297 / *Futures Directorate*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
analytical capabilities will directly inform our Force Design imperatives and provide the rigorous, data-backed insights necessary to maintain a decisive warfighting advantage.					
Accomplishments/Planned Programs Subtotals	131.540	218.206	166.264	0.000	166.264

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603640M / *MC Advanced Technology Demo*	Project (Number/Name) 2958 / *Cyberspace Activities*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2958: *Cyberspace Activities*	0.000	4.946	5.201	5.297	-	5.297	5.444	5.498	5.577	5.674	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project activity provides freedom of maneuver and influence in the cyber-electronic warfare domain while simultaneously denying the same to the adversary and protecting critical command systems. Technologies are being developed using a multi-disciplinary approach that combines Radio Frequency electronics, digital signal processing, computer engineering, software engineering, machine learning and data science to support Naval Expeditionary warfighters operating with size, weight and power constrained equipment in Disrupted, Intermittent, Limited environments. Areas of applied research include distributed precision time, predictive software defined radio architectures, coordinated Cyber and Spectrum maneuver to mitigate detection and exploitation, tactical Cyber visualization, discovering and mapping networks in dense urban environments, contextual awareness and blind channel characterization.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Cyber	4.946	5.201	5.297	0.000	5.297
Articles:	-	-	-	-	-
FY 2026 Plans: - Continue cyber related research into mitigation techniques related to United States Marine Corps (USMC) systems. - Continue advanced research to better identify key cyber terrain at the physical, logical, and cyber persona layers that can be visualized at small unit level. - Continue research to develop of Radio Frequency (RF) enabled Electronic Warfare (EW)/cyber networking that will deliver actions at scale through the integration of secure orchestration, cyber secure sensors, and resilient networking technologies. - Continue research to develop non-traditional platform integration of Cyber-EW capabilities. - Continue research into novel techniques for the exploitation of information technology devices for warfighting utilization by distributed forces. - Continue research to improve warfighter effectiveness in command, control, computers and communication, intelligence, surveillance and reconnaissance in the area of electromagnetic spectrum analysis and signature management. - Initiate effort to develop and demonstrate vulnerability awareness tools and proactive cyber protection that can be inserted into existing vehicles without requiring cutting or irreversible modifications.					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 2958 / *Cyberspace Activities*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Continue: - Cyber related research into mitigation techniques related to United States Marine Corps (USMC) systems. - Advanced research to better identify key cyber terrain at the physical, logical, and cyber persona layers that can be visualized at small unit level. - Develop Radio Frequency (RF) enabled Electronic Warfare (EW)/cyber networking that will deliver actions at scale through the integration of secure orchestration, cyber secure sensors, and resilient networking technologies. - Develop non-traditional platform integration of Cyber-EW capabilities. - Research into novel techniques for the exploitation of information technology devices for warfighting utilization by distributed forces. - Research to improve warfighter effectiveness in command, control, computers and communication, intelligence, surveillance and reconnaissance in the area of electromagnetic spectrum analysis and signature management. Complete: - Develop and demonstrate vulnerability awareness tools and proactive cyber protection that can be inserted into existing vehicles without requiring cutting or irreversible modifications. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Accomplishments/Planned Programs Subtotals	4.946	5.201	5.297	0.000	5.297

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603640M / *MC Advanced Technology Demo*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	51.068	138.239	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	189.307
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Low-Cost Attritable Aircraft Technology ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Building on previous Congressional Enhancements (FYs 2022 - 2025), the Marine Corps Warfighting Laboratory (MCWL) will continue to pursue demonstration and experimentation with the tactical and operational alternative uses of highly autonomous, low-cost unmanned aircraft in an operational environment.	0.000	24.135
Congressional Add: SIGNIT Pod for Unmanned Aircraft ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop SIGNIT Pod for Unmanned Aircraft	0.000	19.307
Congressional Add: Autonomous Ship-To-Shore Group 4 Hybrid eVTOL ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Autonomous Ship-To-Shore Group 4 Hybrid eVTOL	0.000	7.916
Congressional Add: Joint Assured Positioning Navigation and Timing ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Joint Assured Positioning Navigation and Timing	0.000	5.792
Congressional Add: RAID Plate ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop RAID Plate	0.000	6.757
Congressional Add: Advanced ISR/AiTDR/EW Prototype for Mobile Operati	0.000	7.723

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Develop Advanced ISR/AiTDR/EW Prototype for Mobile Operati		
Congressional Add: Arctic Medical Evacuation and Treatment System ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Arctic Medical Evacuation and Treatment System	0.000	6.757
Congressional Add: Attritable UAVs for Counter A2/AD Missions ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Attritable UAVs for Counter A2/AD Missions	0.000	4.344
Congressional Add: Distributed RF Photonic Systems ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Distributed RF Photonic Systems	0.000	1.448
Congressional Add: Littoral Maneuver Capability ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Littoral Maneuver Capability	0.000	18.342
Congressional Add: Multispectral Camouflage Hangar System ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Multispectral Camouflage Hangar System	0.000	4.827
Congressional Add: Next Generation Rotary Wing Logistics UAS ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Next Generation Rotary Wing Logistics UAS	0.000	4.827
Congressional Add: Stand-Off Security Inspection and Surveillance Sys ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Stand-Off Security Inspection and Surveillance Sys	0.000	3.861
Congressional Add: UAS Agile System Development	0.000	5.792

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** UAS Agile System Development		
Congressional Add: Aquatic Drones for Littoral Maneuver ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Aquatic Drones for Littoral Maneuver	0.000	9.654
Congressional Add: Low-Cost tactical hypersonic long-range fires ***FY 2025 Accomplishments:*** Conduct research to provide timely fires at extended ranges. ***FY 2026 Plans:*** Continue to Conduct research to provide timely fires at extended ranges.	4.827	6.757
Congressional Add: Mutli-function array for C-UAS ***FY 2025 Accomplishments:*** Building on the FY 2023 Congressional Enhancement, the Marine Corps Warfighting Laboratory (MCWL) will continue to conduct advanced technology development and experimentation focused on next-generation electromagnetic warfare and sensing capabilities. Efforts include evaluation, experimentation, and enhancement of prototype wideband open architecture antenna arrays as well as demonstration of passive detection, Low Probability of Intercept (LPI) radar, and surgical (low fratricide) countermeasures. ***FY 2026 Plans:*** N/A	9.654	0.000
Congressional Add: low-cost attritable aircraft technology ***FY 2025 Accomplishments:*** Building on previous Congressional Enhancements (FYs 2022 - 2024), the Marine Corps Warfighting Laboratory (MCWL) will continue to pursue demonstration and experimentation with the tactical and operational alternative uses of highly autonomous, low-cost unmanned aircraft in an operational environment. Efforts will inform acquisition requirements, as well as provide Tactics, Techniques, and Procedure (TTP) development to provide mission flexibility and accelerate the kill chain while imposing a positive "cost" trade-off with adversaries. Demonstration will inform Concepts of Employment (COEs) for Manned/Unmanned Teaming (MUM-T) and the development of technology that supports desired COEs. ***FY 2026 Plans:*** N/A	33.691	0.000
Congressional Add: Composite shelters	2.896	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603640M / *MC Advanced Technology Demo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: Continue research to design, prototype, and test a new CDEW compatible Navy/ USMC General Composite Rigid Wall Structure based on the Mobile Facility (CRWS-MF) and a compatible engineering design for the Army/USMC Composite Rigid Wall Shelter - Vehicle Mounted; Arctic Medical Evacuation and Treatment Systems (CRWS-VM AMETS). ***FY 2026 Plans:*** N/A		
Congressional Adds Subtotals	51.068	138.239

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603651M *I JT Non-Lethal Wpns Tech Dev*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	15.702	6.561	8.727	-	8.727	8.261	9.005	8.560	8.703	Continuing	Continuing
3022: *Joint Non Lethal Weapons*	0.000	15.702	6.561	8.727	-	8.727	8.261	9.005	8.560	8.703	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Non-Lethal Weapons Program was established by the FY96 National Defense Authorization Act. The Office of the Secretary of War (OSW) designated the Commandant of the Marine Corps (CMC) as the DoW NLW Executive Agent (EA). The EA exercises centralized responsibility for joint research and development of non-lethal weapons and technology through the Joint Non-Lethal Weapons Program (JNLWP). The Office of the Under Secretary of War for Acquisition and Sustainment (A&S) serves as the OSW Principal Staff Assistant and oversees, in consultation with the Under Secretary of War for Policy and the DoW NLW Executive Agent.

The efforts described in this Program Element (PE) reflect science and technology (S&T) investment decisions by the Joint Non-Lethal Weapons (NLW) Integrated Product Team, a multi-service flag level corporate board that provides executive oversight and management for the JNLWP for the CMC. This direction is based on the requirements and capabilities sought by the Services and the Coast Guard, as identified in the DoW's Non-Lethal Weapons Joint Capabilities Based Assessment Document. This coordinated joint S&T development approach addresses mutual capability gaps and assures the most relevant non-lethal technologies, capabilities and equipment are provided to the operating forces while eliminating duplicative service S&T investment. These advanced technology development initiatives feed non-lethal capabilities which directly support the National Defense Strategy (NDS) objective of strategic competition by providing options to the Joint Force in pursuit of national objectives in legal or policy constrained scenarios, as well as complementing the use of lethal effects in complex combat scenarios, for example, in urban environments with large civilian populations. Ongoing NLW studies, analyses and exercise efforts with North Atlantic Treaty Organization (NATO) and Allies also support NDS objectives to strengthen alliances and partnerships. Resulting capabilities will facilitate a fully integrated non-lethal competency as a complement to lethal firepower, providing force application options for below lethal threshold engagements.

This program funds Advanced Technology Development of next-generation non-lethal capabilities and include performing analysis, technology development efforts, and modeling and simulation necessary to ensure optimum weaponization and use of these capabilities. Investment areas include research and development of next-generation NLW Intermediate Force Capabilities (IFCs) such as: non-lethal directed energy weapons (lasers, millimeter wave and high-power microwave) for counter-personnel and counter-materiel missions; non-lethal counter-personnel technologies (acoustic, optical, and human electro-muscular disruption technologies), and advanced non-lethal materials (including materials for vehicle/vessel stopping and counter-facility applications). Next generation non-lethal systems focus on long-range localized non-lethal effects to identified threat individuals (or groups of individuals) and/or their threat weapons systems operating in complicated environments such as urban areas, crowds, buildings, vehicles, vessels, and in close proximity to high-value civilian facilities.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603651M *I JT Non-Lethal Wpns Tech Dev*

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	16.188	6.561	11.039	-	11.039
Current President's Budget	15.702	6.561	8.727	-	8.727
Total Adjustments	-0.486	0.000	-2.312	-	-2.312
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.486	0.000			
• Program Adjustments	0.000	0.000	-2.312	-	-2.312

Change Summary Explanation

Funding: Reduction due to re-baselining of S&T Funding.

Technical: No significant change.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603651M / *JT Non-Lethal Wpns Tech Dev*	Project (Number/Name) 3022 / *Joint Non Lethal Weapons*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3022: *Joint Non Lethal Weapons*	0.000	15.702	6.561	8.727	-	8.727	8.261	9.005	8.560	8.703	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This project funds the research and development of next-generation Non-Lethal Weapons and includes performing analysis, technical development efforts, and modeling and simulation necessary to ensure optimum weaponization and use of these NLW. Investment areas include research and development of next-generation Non-Lethal Weapons (NLW) such as: non-lethal directed energy weapons (lasers, millimeter wave and high-power microwave) for counter-personnel and counter-materiel missions; non-lethal counter-personnel technologies (acoustic, optical, and human electro-muscular disruption technologies), and advanced non-lethal materials (including materials for vehicle/vessel stopping and counter-facility applications). Next-generation Non-Lethal Weapons systems focus on long-range localized Non-Lethal effects to identified threat individuals (or groups of individuals) and/or their threat weapons systems operating in complicated environments such as urban areas, crowds, buildings, vehicles, vessels, and also in close proximity to high-value civilian facilities.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Joint Non-Lethal Weapons	15.702	6.561	8.727	0.000	8.727
Articles:	-	-	-	-	-
FY 2026 Plans: - Complete integration of various human effects dose response studies into a generalized repel and thermodynamic model of relevant human effects that are safe for operational engagements with Non-lethal Weapons (NLW) and Intermediate Force Capabilities (IFCs). - Complete Prototyping multiple long-range adaptive hardware and software systems to validate Non-lethal Weapons (NLW) and Intermediate Force Capability (IFC) Directed Energy (DE) emissions are safely aimed on human targets. - Complete Subsystem and component design and development of high peak-power, both for wide-band and narrow-band Radio Frequencies, in support of longer range and more compact NLW and IFC DE effects. - Continue research and investigation of Non-Lethal Weapons (NLWs) and Intermediate Force Capability (IFC) effects and emergent technologies with the potential to further address the Joint Requirements Oversight Council (JROC) approved non-lethal counter-personnel and counter-materiel capability gaps. Specifically, explore new non-lethal effects and evaluate alternative innovative applications of existing technologies to					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603651M / *JT Non-Lethal Wpns Tech Dev*	**Project (Number/Name)** 3022 / *Joint Non Lethal Weapons*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
address future non-lethal capability needs as escalation of force platforms. Examples of counter-personnel research include further optimization of non-lethal human effects, and enhanced understanding of human target behavioral effects. - Continue to characterize non-lethal phenomena and to assess target human effects and weapons effectiveness, including the development of dose response and injury correlates for new Non-Lethal Weapons technologies. - Continue to assess and study new technology effectiveness and behavioral response, such as advancing the understanding of Flash Bang effects on humans to support novel non-explosive alternatives to pyrotechnic non-lethal IFC devices. - Continue Counter-materiel research to include the investigation of novel intermediate force capabilities for increased delivery and employment options; for applications such as vehicle and vessel stopping and the further optimization of intermediate force materials for integration into future intermediate force platforms. - Continue to perform feasibility and design studies for high peak power radio frequency directed energy sources and other high-power directed energy technologies with extended range applications and longer duration of effect. - Continue investigation and conceptual design of high-power technologies to enable improved performance and reduce overall size, weight, power consumption, and overall system costs. Results will support the transition of viable technologies to higher levels of development and demonstration. Specifically complete W-band module for continued development of next generation prototype demonstration.					
FY 2027 Base Plans: - Continue research and investigation of Non-Lethal Weapons (NLWs) and Intermediate Force Capability (IFC) effects and emergent technologies with the potential to further address Joint Requirements Oversight Council (JROC) approved non-lethal counter-personnel and counter-materiel capability gaps. Specifically, explore new non-lethal effects and evaluate alternative innovative applications of existing technologies to address future non-lethal capability needs as escalation of force platforms. Examples of counter personnel research include further optimization of non-lethal human effects, and enhanced understanding of human target behavioral effects.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603651M / *JT Non-Lethal Wpns Tech Dev*	**Project (Number/Name)** 3022 / *Joint Non Lethal Weapons*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue counter-materiel research to include the investigation of novel intermediate force capabilities for increased delivery and employment options. - Continue to conduct feasibility studies and develop high peak power radio frequency directed energy sources and other high-power microwave directed energy system components to enable extended range applications and longer durations of effect. - Continue investigation and conceptual design of high-power microwave technologies to enable improved performance and reduce overall size, weight, power consumption, and overall system costs. Results will support the transition of viable technologies to higher levels of development and demonstration. - Initiate development of an advanced non-lethal directed energy system. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase of $2.166M in funding from FY26 to FY27 is to initiate development of an advanced non-lethal directed energy system.					
Accomplishments/Planned Programs Subtotals	15.702	6.561	8.727	0.000	8.727

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0603851M/2319: *Non-Lethal Weapons*	29.360	9.832	14.152	-	14.152	11.394	10.464	10.038	10.296	Continuing	Continuing
• RDTEN/0602651M/0000: *Joint Non-Lethal Weapons Applied Research*	7.487	7.300	4.105	-	4.105	3.774	4.138	4.539	4.614	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603673N *I Future Naval Capabilities Advanced Tech Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	250.477	523.426	445.977	-	445.977	455.258	458.833	451.249	480.741	Continuing	Continuing
1160: *Capable Manpower (CMP)*	0.000	0.000	5.329	5.379	-	5.379	5.487	5.603	5.684	5.781	Continuing	Continuing
1161: *Expeditionary Maneuver Warfare (EMW)*	0.000	25.799	18.600	23.939	-	23.939	29.498	9.328	0.000	0.000	0.000	107.164
1162: *Air Warfare (AW)*	0.000	46.593	59.240	58.192	-	58.192	44.324	12.508	0.000	0.000	0.000	220.857
1163: *Information Warfare (IW)*	0.000	58.730	68.211	84.995	-	84.995	65.872	28.262	0.000	0.000	0.000	306.070
1164: *Surface Warfare (SW)*	0.000	46.184	82.716	92.196	-	92.196	71.427	19.644	0.000	0.000	0.000	312.167
1165: *Undersea Warfare (UW)*	0.000	60.433	53.902	42.016	-	42.016	26.528	16.695	0.000	0.000	0.000	199.574
2966: *S&T Campaigns*	0.000	0.000	167.853	134.808	-	134.808	142.483	177.139	169.484	194.111	Continuing	Continuing
3346: *Future Naval Capabilities Adv Tech Dev*	0.000	5.015	0.000	4.452	-	4.452	69.639	189.654	276.081	280.849	Continuing	Continuing
9999: *Congressional Adds*	0.000	7.723	67.575	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.298

Note

The Innovative Naval Prototypes (INP) Adv Tech Dev (6.3) PE 0603801N has been consolidated into the Future Naval Capabilities Adv Tech Dev (6.3) PE 0603673N beginning in FY2026 in alignment with the DoW Implementation Plan from the Commission on PPBE Interim Report for PE/BLI Consolidation.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) was established to ensure the technological advantage of U.S. Naval forces. ONR manages the Department of the Navy's science and technology (S&T) research portfolio (Basic, Applied and Advanced Technology Development investments). This work includes the Future Naval Capabilities (FNC) program, which delivers technology solutions to known requirements and accelerates innovative technology insertion into Programs of Record (PORs). In close and structured coordination with POR Stakeholders (Combat Capability Development organizations, Operating Forces, and acquisition organizations), FNC efforts create revolutionary technology for Programs of Record (PORs). ONR's S&T competencies create substantially higher levels of technology, trade space, and capability gain than acquisition can create within POR programmatic risk constraints. FNC projects create exponential technology improvement substantially cheaper than POR vendors do. The structured FNC process and its specific transition mechanisms manage technical risk and increase the likelihood that technologies systematically deploy to warfighters.

The FNC efforts described in this Program Element (PE) 0603673N for FNC Advanced Technology Development use earlier research conducted in PE 0602750N for FNC Applied Research and have follow-on transition funding commitments in the receiving acquisition POR PEs. Using a competitive selection process, ONR and POR Stakeholders assess and select each effort in this PE based on its revolutionary technology payoff to the naval warfighter and prioritized operating force requirements.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603673N *I Future Naval Capabilities Advanced Tech Dev*

Selections may be refined as technologies mature and priorities evolve enabling the program to meet emerging warfighter needs. FNC requests from POR Stakeholders exceed funding available in the FNC Program and drive the competitive selection.

The addition of Innovative Naval Prototypes in FY 2026 described in this Program Element (PE) 0603673N for FNC Advanced Technology Development are contained in RDTE Project 2966 S&T Campaigns and contain the Budget Activity 3 portion of the Innovative Naval Prototype (INP Program). These INP efforts, which are developed in coordination with INP Applied Research Investments now funded in PE 0602750N Future Naval Capabi8lities Applied Research, attempt to solve problems and respond to mission requirements, by exploratory research for new ideas and breakthrough capabilities. INPs are Larger in scope, scale and risk than FNCs and are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs often have long trial-and-error timeframes to work through challenges, but typically no more than three years between decision points. INP BA3 efforts require advanced technology development funding to bridge from Applied Research to working prototypes. INPs prove technological and capability potential, validate production feasibility, and acquisition potential. ONR demonstrates INPs in relevant environments. Selections may be refined as technologies mature and priorities evolve enabling the program to meet emerging warfighter needs. Successful experimentation and demonstrations present the Department of the Navy with disruptive capabilities that may lead to new acquisition programs. INPs are selected by senior leadership in the Department of the Navy.

Due to the classified efforts in this PE, some have incomplete descriptions. ONR can provide additional information in classified documents.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	257.768	455.851	473.536	-	473.536
Current President's Budget	250.477	523.426	445.977	-	445.977
Total Adjustments	-7.291	67.575	-27.559	-	-27.559
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.425			
• Congressional Rescissions	-	-			
• Congressional Adds	-	70.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.827	0.000			
• SBIR/STTR Transfer	-4.465	0.000			
• Program Adjustments	0.000	0.000	-27.559	-	-27.559
• Rate/Misc Adjustments	0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Carbon nanotube integration*	2.896	0.000
Congressional Add: *Electronic maneuver warfare unmanned sensors*	4.827	0.000
Congressional Add: *Coherently-Combined Fiber Laser Arrays Without Wav*	0.000	14.480

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603673N *I Future Naval Capabilities Advanced Tech Dev*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Congressional Add: *Advanced Seeker Technology for Hypersonic Missiles*	0.000	4.827
Congressional Add: *Low-Cost, Mass Producible, Hypersonic Long-Range S*	0.000	24.134
Congressional Add: *Warfigher Experience Lab*	0.000	19.307
Congressional Add: *Super Swarm*	0.000	4.827
Congressional Add Subtotals for Project: 9999	7.723	67.575
Congressional Add Totals for all Projects	7.723	67.575

Change Summary Explanation

The FY 2027 budget request decreased primarily due to the early completion in FY 2026 of the Joint Laser Weapon System (JLWS) investment in Project 2966 - S&T Campaigns.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1160 / *Capable Manpower (CMP)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1160: *Capable Manpower (CMP)*	0.000	0.000	5.329	5.379	-	5.379	5.487	5.603	5.684	5.781	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Capable Manpower Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts focus on all aspects of training, including accelerated learning, training environments, ready relevant training, and Live-Virtual-Constructive (LVC) training.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: My Navy Foresight (MNF)	0.000	1.964	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: My Navy Foresight (MNF) - Complete the MNF FNC, originally planned to complete in FY25, by completing development of the modelling capabilities and software. - Support transition to system development and demonstration activities. - Complete development of system models and associated documentation that will provide realistic quantitative simulation of Manpower, Personnel, Training, and Education (MPTE) behavior. - Deliver a functioning prototype to stakeholders. - Support MyNavyHR information technology solutions in identifying and documenting requirements for software solutions that address MNF capability gaps.					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Talent Management NEXUS (TM Nexus)	0.000	3.365	5.379	0.000	5.379
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1160 / *Capable Manpower (CMP)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: Talent Management NEXUS (TM Nexus) - Continue TM Nexus by developing software to meet defined requirements for a Talent Management (TM) Nexus prototype and integration into Navy software infrastructure. - Continue development of a prototype combining disparate data sources to include leadership assessment data and personnel information. - Continue testing of TM Nexus prototype with large scale Navy personnel data. ***FY 2027 Base Plans:*** Talent Management NEXUS (TM Nexus) - Complete TM Nexus by developing software to meet defined requirements for a Talent Management (TM) Nexus prototype and integration into Navy software infrastructure. - Complete development of a prototype combining disparate data sources to include leadership assessment data and personnel information. - Complete testing of TM Nexus prototype with large scale Navy personnel data. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funds from FY 2026 to FY 2027 will support increased engineering and development of capability and scaling of TM Nexus prototype software applications to support full force experimentation, testing, and validation of Navy personnel data/records. Engineering will also update Program of Record (POR) legacy systems to be able to accept the new data collection, compilation, and analytic capabilities within appropriately secure information Technology (IT) environments. Additional funds are also needed to support integration of the prototype within Navy IT infrastructure to support end-of-FNC hand-off and transition into the Program of Record.					
Accomplishments/Planned Programs Subtotals	0.000	5.329	5.379	0.000	5.379

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1161 / *Expeditionary Maneuver Warfare (EMW)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1161: *Expeditionary Maneuver Warfare (EMW)*	0.000	25.799	18.600	23.939	-	23.939	29.498	9.328	0.000	0.000	0.000	107.164
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Expeditionary Maneuver Warfare (EMW) Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in PE 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. The advanced technologies being developed under this Project include innovative naval mine, mine counter measures (MCM), mine delivery methods, low observable mine neutralization technologies, and other technologies supporting expeditionary maneuver warfare overall.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Expeditionary Maneuver Warfare	25.799	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Expeditionary Maneuver Warfare Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in PE 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. The advanced technologies being developed under this Project include innovative naval mine, mine counter measures (MCM), mine delivery methods, low observable mine neutralization technologies, and other technologies supporting expeditionary maneuver warfare overall.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Title: Magnetic & Acoustic Generation Next Unmanned Superconducting Sweep (MAGNUSS)	0.000	0.600	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: Magnetic & Acoustic Generation Next Unmanned Superconducting Sweep (MAGNUSS)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1161 / *Expeditionary Maneuver Warfare (EMW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete the advanced development model prototype and testing of magnetic, acoustic, and command/control sub-systems. - Complete system integration and on-water tests. - Complete the final system demonstration for transition to the program of record. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Long-Range Over the Horizon (OTH) Communications at High Frequency (HF) Using a Nested, Electronically-Steered System (LOCH NESS) ***Articles:*** ***FY 2026 Plans:*** Long-Range Over the Horizon (OTH) Communications at High Frequency (HF) Using a Nested, Electronically-Steered System (LOCH NESS) - Complete HF multifunction architecture development for greater resiliency. - Complete waveform design and beam forming/nulling with advanced algorithms and M&S validation. - Complete prototype development with pacing demonstration of capabilities. - Complete final design review with stakeholders. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.	0.000 -	4.000 -	0.000 -	0.000 -	0.000 -
Title: Next Generation High Frequency (NGHF) ***Articles:*** ***FY 2026 Plans:***	0.000 -	4.700 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1161 / *Expeditionary Maneuver Warfare (EMW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Next Generation High Frequency (NGHF) - Complete the NGHF FNC by incorporating HF signal detection algorithms into baseline hardware and relocatable HF system. - Complete fabrication of the relocatable HF test system and conduct field testing. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Neutralization in Challenging Environments Using Lethal Effects (NICELE) ***Articles:***	0.000 -	9.300 -	10.100 -	0.000 -	10.100 -
FY 2026 Plans: Neutralization in Challenging Environments Using Lethal Effects (NICELE) - Initiate spiral development of critical technologies including undersea communication, navigation, autonomy, sensing, hardening, and effects. - Initiate subcomponent level reacquisition and neutralization characterization to refine a system of systems level integration plan and transition requirements. - Initiate trade study for effects subcomponents informed by prototype data, modeling, and simulation. ***FY 2027 Base Plans:*** - Continue spiral development of critical technologies including undersea communication, navigation, autonomy, sensing, hardening, and effects. - Continue subcomponent level reacquisition and neutralization characterization to refine a system of systems level integration plan and transition requirements. - Continue trade study for effects subcomponents informed by prototype data, modeling, and simulation. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1161 / *Expeditionary Maneuver Warfare (EMW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase from FY 2026 to FY 2027 is due to a planned ramp-up of development in FY 2027 as this FNC enters its second year.					
Title: Deep Sea Expeditionary with No Decompression (DSEND) ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Deep Sea Expeditionary with No Decompression (DSEND) This FNC was selected and is being accelerated to start in 6.3 due to technology maturation. in 6.3 DSEND will: - Initiate research to incorporate articulating joints into the legs and knees of DSEND suit to enhance leg flexibility. - Initiate research to reduce DSEND suit displacement while increasing form factor fit to optimize diver performance and dexterity. - Initiate in-water testing for 50-foot rated prototype suit and pressure testing for 600+ foot rated joint prototypes. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.	0.000 -	0.000 -	4.140 -	0.000 -	4.140 -
Title: Flexible Low-Cost Intercept Technology elements (FLITE) ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Flexible Low-Cost Intercept Technology elements (FLITE) - Initiate propulsion and seeker systems trade space analysis. - Initiate airframe and guidance control modeling and simulation and design. - Initiate prototype development and flight testing of initial design.	0.000 -	0.000 -	9.699 -	0.000 -	9.699 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1161 / *Expeditionary Maneuver Warfare (EMW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate system architecture integration. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Accomplishments/Planned Programs Subtotals	25.799	18.600	23.939	0.000	23.939

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1162 / *Air Warfare (AW)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1162: *Air Warfare (AW)*	0.000	46.593	59.240	58.192	-	58.192	44.324	12.508	0.000	0.000	0.000	220.857
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Air Warfare Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include human machine interfaces for unmanned platforms and payloads that will assist with delegation of resources from one operator to another, airframe corrosion protection, and a Carrier Air Wing performance assessment tool that uses live, virtual, and constructive data to improve pilot and aircrew performance in near real-time. Different software efforts address unique and specific requirements.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Air Warfare	46.593	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Air Warfare Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include human machine interfaces for unmanned platforms and payloads that will assist with delegation of resources from one operator to another, airframe corrosion protection, and a Carrier Air Wing performance assessment tool that uses live, virtual, and constructive data to improve pilot and aircrew performance in near real-time. Different software efforts address unique and specific requirements. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: Digital Expanded Ultra-High Frequency (UHF) Multiple Input, Multiple Output (MIMO) Optimized Radar (DEUMOR)	0.000	2.000	0.000	0.000	0.000
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: Digital Expanded Ultra-High Frequency (UHF) Multiple Input, Multiple Output (MIMO) Optimized Radar (DEUMOR) - Complete the DEUMOR FNC, originally planned to finish in FY 2025, by completing flight testing of prototype hardware and software. - Validate exit criteria and technical performance parameters. - Deliver final design package for transition to the Program of Record. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Coordinated Advanced Distributed Radio Frequency (RF) Effects (CADRE)	0.000	6.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: Coordinated Advanced Distributed Radio Frequency (RF) Effects (CADRE) - Complete development of novel technology capabilities to enable advanced distributed and coordinated airborne electronic attack techniques to defeat advanced threats. - Complete and test firmware enhancements to enable coordinated techniques in the host platform. - Complete and test hardware-in-the-loop experimentation to evaluate effectiveness of single platform enhancements. - Complete development and testing of the multi-platform coordination capability. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: UnderSea Advantage Block Upgrade (USABU) ***Articles:*** ***FY 2026 Plans:*** UnderSea Advantage Block Upgrade (USABU) - Continue development of a large, low-noise volumetric array that can be deployed in an A-size sonobuoy that will have superior detection performance against relevant targets. - Continue receive sensor array validation and sonobuoy integration. - Continue development of acoustic source array for an A-size sonobuoy that will have increased operational bandwidth. - Continue source array validation and manufacture the second build of the prototype transmit arrays. ***FY 2027 Base Plans:*** UnderSea Advantage Block Upgrade (USABU) - Complete development of a large, low-noise volumetric array that can be deployed in an A-size sonobuoy that will have superior detection performance against relevant targets. - Complete receive sensor array validation and sonobuoy integration. - Complete development of acoustic source array for an A-size sonobuoy that will have increased operational bandwidth. - Complete source array validation and manufacture the second build of the prototype transmit arrays. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The small decrease from FY 2026 to FY 2027 does not reflect a significant change in the investment for this FNC.	0.000 -	11.398 -	11.099 -	0.000 -	11.099 -
Title: Stick ***Articles:*** ***FY 2026 Plans:*** Stick - Continue Stick data collection and algorithm testing based on FY25 studies. - Finalize Open Mission System (OMS) messaging.	0.000 -	8.475 -	8.474 -	0.000 -	8.474 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Mature the Stick FNC algorithm based on a target performance study. - Perform surrogate flight testing and initiate platform flight test planning. - Begin Stick FNC software integration into the Wideband Receiver. ***FY 2027 Base Plans:*** Stick - Complete Stick data collection and algorithm testing based on FY25 studies; - Complete maturation of Stick FNC algorithm based on a target performance study; - Complete integration of Stick software on the Wideband Receiver or surrogate; - Complete surrogate flight testing and initiation of platform flight test planning; - Initiate and complete final demonstration of Open Mission System (OMS) and Government Reference Architecture messaging; - Initiate and complete Stick flight demonstration on platform as graduation exercise. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The small decrease from FY 2026 to FY 2027 does not reflect a significant change in the investment for this FNC.					
Title: Advanced Capability Maritime Effector (ACME)	0.000	7.973	3.212	0.000	3.212
Articles:	-	-	-	-	-
FY 2026 Plans: Advanced Capability Maritime Effector (ACME) - Initiate Propulsion and Airframe system requirements and design for the Advanced Capability Maritime Effector (ACME) Future Naval Capability. - Initiate Solid Fuel Ramjet (SFRJ) fuel and regression characterization leading to early engine sub-component testing. - Initiate Powdered Fuel Ramjet Technology development. ***FY 2027 Base Plans:*** Advanced Capability Maritime Effector (ACME) - Continue development of the Powdered Fuel Ramjet Technology development.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete all work on the Continue Solid Fuel Ramjet (SFRJ) fuel and regression characterization and the laboratory testing of the preliminary MFRJ design, switching the entire effort to focus on the development of the Powdered Fuel Ramjet Technology. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to this FNC being descoped to focus on developing just the Ramjet fuel technology.					
Title: Pinball Wizard	0.000	8.624	8.314	0.000	8.314
Articles:	-	-	-	-	-
FY 2026 Plans: Pinball Wizard - Initiate data collection to inform Modeling and Simulation of signals environments to identify appropriate Program of Record hardware. - Initiate development of models, design signal processing techniques, and identify metrics. - Initiate planning for field tests of integrated hardware to study performance limitations. - Initiate Concept of Operation and implementation studies for development of a mission planner. ***FY 2027 Base Plans:*** Pinball Wizard - Continue data collection to inform Modeling and Simulation of signals environments to identify appropriate Program of Record hardware. - Continue development of models, design signal processing techniques, communications capabilities, mission planner, and identify metrics. - Continue planning for field tests of integrated hardware to study performance limitations. - Continue development Concepts of Operation and Employment in conjunction with stakeholders. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The small decrease from FY 2026 to FY 2027 does not represent a significant change to the investment for this FNC.					
Title: Robust Environment Technology for Enhanced Recovery to Navy Ships (RETERNS) ***Articles:*** ***FY 2026 Plans:*** Robust Environment Technology for Enhanced Recovery to Navy Ships (RETERNS) - Continue the RETERNS FNC by continuing to define requirements and originating multi-phased development of a system design effective within both permissive and contested environments. - Continue laboratory testing of the RETERNS system preliminary design to predict and analyze key hardware and software subsystem performance. ***FY 2027 Base Plans:*** Robust Environment Technology for Enhanced Recovery to Navy Ships (RETERNS) - Continue development and field testing of initial hardware/software prototype system design to enable rapid fielding of interim capability. - Initiate next-level component design, system development, and laboratory testing of final prototype hardware/software to meet full system operational requirements. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to initiation of next-level component design, system development, and laboratory testing of the final prototype hardware/software to meet full system operational requirements.	0.000 -	5.800 -	9.221 -	0.000 -	9.221 -
Title: Pegasus ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Pegasus - Initiate C5ISR-T system requirements and design for integration on Naval rotorcraft.	0.000 -	0.000 -	7.420 -	0.000 -	7.420 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate algorithm analysis, modeling, and optimization leading to freedom of maneuver in contested environments. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Title: Automated Non-Destructive Inspection with Machine Learning (ANIMAL) ***Articles:*** ***FY 2026 Plans:*** Automated Non-Destructive Inspection with Machine Learning (ANIMAL) - Initiate and develop the software solutions architecture for the Automated Non-Destructive Inspection with Machine Learning (ANIMAL) Future Naval Capability. - Initiate algorithm training for automated defect detection, classification, and sizing capabilities on calibration standards. ***FY 2027 Base Plans:*** Automated Non-Destructive Inspection with Machine Learning (ANIMAL) - Continue developing the software solutions architecture for the Automated Non-Destructive Inspection with Machine Learning (ANIMAL) Future Naval Capability. - Continue algorithm training for automated defect detection, classification, and sizing capabilities on calibration standards. - Initiate algorithm optimization using fleet datasets from legacy inspections. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to initiating algorithm optimization using fleet datasets from legacy inspections.	0.000 -	4.270 -	5.470 -	0.000 -	5.470 -
Title: Dynamic Optimization of Lift Involving Tactical Transit for Lengthened Engagements (DOOLITTLE)	0.000	0.000	4.982	0.000	4.982

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Articles:	-	-	-	-	-
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** Dynamic Optimization of Lift Involving Tactical Transit for Lengthened Engagements (DOOLITTLE) - Initiate multi-ship formation flight requirements and concept of operations. - Initiate multi-ship automatic formation flight control software development and evaluate in simulation environment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Title: No-Fatigue Protection Schemes (Non-FAT)	0.000	4.700	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: No-Fatigue Protection Schemes (Non-FAT) - Complete this FNC by validating processing parameters and performance of Electrolytic Conversion Coating (ECC) versus baselines technologies, including structural characterization. - Demonstrate component processing at depot. - Initiate/Complete Tech Warrant Holder (TWH) authorization package for ECC transition. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Accomplishments/Planned Programs Subtotals	46.593	59.240	58.192	0.000	58.192

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1162 / *Air Warfare (AW)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1163 / *Information Warfare (IW)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1163: *Information Warfare (IW)*	0.000	58.730	68.211	84.995	-	84.995	65.872	28.262	0.000	0.000	0.000	306.070
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Information Warfare Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts provide Information Warfare capabilities across several disparate uses and environments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Information Warfare	58.730	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Information Warfare Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts provide Information Warfare capabilities across several disparate uses and environments. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: 4 Leaf Clovers	0.000	8.700	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: 4 Leaf Clovers - Complete development of advanced detection and classification algorithms and, validate models/simulations for distributed signal processing techniques. - Complete development of cyber capabilities as informed by the cyber security analysis results.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Demonstrate cyber capabilities to assess effectiveness in support of transition. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Federated Learning and Optimization for Wireless networks (FLOW) ***Articles:*** ***FY 2026 Plans:*** Federated Learning and Optimization for Wireless networks (FLOW) - Complete system engineering and Modeling and Simulation (M&S) for wireless network optimization with enhanced mission performance. - Complete algorithm and protocol development for network optimization and control. - Complete software prototype development. - Complete final design and review with stakeholders. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.	0.000 -	3.000 -	0.000 -	0.000 -	0.000 -
Title: Measurement-Based Adaptive Response (M-BAR) ***Articles:*** ***FY 2026 Plans:*** Measurement-Based Adaptive Response (M-BAR) - Continue development and test technologies needed to enable real-time adaptive electronic attack techniques to defeat modern anti-ship missile threats.	0.000 -	10.415 -	5.000 -	0.000 -	5.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development and integration of real-time processing algorithms that can enhance legacy system performance. - Continue development and testing of techniques that can dynamically reconfigure current processing pipelines to increase system agility. - Continue development and integration of an Electronic Warfare (EW) testbed needed to evaluate new electronic attack techniques. - Prepare plans to demonstrate new adaptive electronic attack techniques in an operationally relevant environment. ***FY 2027 Base Plans:*** Measurement-Based Adaptive Response (M-BAR) - Complete development and integration of an Electronic Warfare (EW) testbed needed to evaluate new electronic attack techniques. - Initiate demonstration of new adaptive electronic attack techniques in an operationally relevant environment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to this FNC winding down as it completes in FY 2027.					
Title: Environmental Satellite Characterization and Algorithm Processor Enhancements (ESCAPE)	0.000	2.972	3.337	0.000	3.337
Articles:	-	-	-	-	-
FY 2026 Plans: Environmental Satellite Characterization and Algorithm Processor Enhancements (ESCAPE) - Continue porting of legacy software capabilities, including satellite readers, product specifications, and enhancement suites to demonstrate equivalent capability and continuity from previous system. - Continue development of new features, including organizational database to streamline production time and graphical user interface upgrades to emphasize program requirements and incorporate current user survey desires. - Conduct refined feature prototype transition and testing in an end-to-end laboratory system. ***FY 2027 Base Plans:*** Environmental Satellite Characterization and Algorithm Processor Enhancements (ESCAPE)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete porting of legacy software capabilities, including satellite readers, product specifications, and enhancement suites to demonstrate equivalent capability and continuity from previous system. - Complete development of new features, including organizational database to streamline production time and graphical user interface upgrades to emphasize program requirements and incorporate current user survey desires. - Complete refined feature prototype transition and testing in an end-to-end laboratory system. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 does not represent a significant change in the investment for this FNC.					
Title: Multi-objective Automated Routing for Ships ALgorithm (MARSHAL) ***Articles:***	0.000 -	5.237 -	5.238 -	0.000 -	5.238 -
FY 2026 Plans: Multi-objective Automated Routing for Ships ALgorithm (MARSHAL) - Continue the MARSHAL FNC by developing a secure, multi-enclave, cloud-based capability to replace the legacy Fleet Weather Center (FWC) Optimum Track Ship Routing (OTSR) system with a much higher degree of automation and multi-objective optimization, enabling safe and effective physical maneuver in Distributed Maritime Operations for the Hybrid manned and unmanned surface fleet. - Continue development of a cloud-computing based Ship Tracker that links to Fleet Command and Control, and scheduling, and includes automated and multi-objective options to provide more frequent, more accurate, and longer lead time guidance to avoid hazardous weather and operate effectively. ***FY 2027 Base Plans:*** Multi-objective Automated Routing for Ships ALgorithm (MARSHAL) - Continue the MARSHAL FNC by developing a secure, multi-enclave, cloud-based capability to replace the legacy Fleet Weather Center (FWC) Optimum Track Ship Routing (OTSR) system with a much higher degree of automation and multi-objective optimization, enabling safe and effective physical maneuver in Distributed Maritime Operations for the Hybrid manned and unmanned surface fleet.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue development of a cloud-computing based Ship Tracker that links to Fleet Command and Control, and scheduling, and includes automated and multi-objective options to provide more frequent, more accurate, and longer lead time guidance to avoid hazardous weather and operate effectively. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 does not represent a significant change in the investment for this FNC.					
Title: Spectrum Operations Coordinator for Combat System Electromagnetic Radiation (SOCCER) ***Articles:*** ***FY 2026 Plans:*** Spectrum Operations Coordinator for Combat System Electromagnetic Radiation (SOCCER) - Continue the SOCCER FNC by initiating development of real-time frequency planning and sensor coordination software applications. - Initiate certification risk-reduction activities for combat system integration. - Develop simulated software interfaces from model-based systems engineering designs for integrated spectrum operations architecture. ***FY 2027 Base Plans:*** Spectrum Operations Coordinator for Combat System Electromagnetic Radiation (SOCCER) - Complete the SOCCER FNC by completing development of real-time frequency planning and sensor coordination software applications. - Complete certification risk-reduction activities for combat system integration. - Complete development of simulated software interfaces from model-based systems engineering designs for integrated spectrum operations architecture. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 does not represent a significant change in the investment for this FNC.	0.000 -	7.845 -	7.545 -	0.000 -	7.545 -
Title: Matador ***Articles:***	0.000 -	6.375 -	8.750 -	0.000 -	8.750 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: Matador - Initiate the Matador FNC by defining the requirements and initiating development of the countermeasure subsystem. - Initiate design and development of the processing and tracking subsystem. - Initiate design and development of the camera subsystem. ***FY 2027 Base Plans:*** Matador - Continue the Matador FNC by completing the design and continuing development of the processing and tracking subsystem. -Complete the design and continue development of the camera subsystem. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to a planned ramp-up in efforts associated with continuing development of the processing and tracking subsystem and the camera subsystem.					
Title: Dark Roast	0.000	7.167	7.167	0.000	7.167
Articles:	-	-	-	-	-
FY 2026 Plans: Dark Roast - Initiate Modeling and Simulation environment for collaborative technique development across a multidisciplinary team of industry and government performers. - Initiate development of assured cyber capabilities with algorithm research, data collection, model development, and metrics identification. - Initiate Concept of Operation and implementation studies for new mission profiles and software architecture design. - Initiate planning for bench tests of integrated hardware and software products. ***FY 2027 Base Plans:*** Dark Roast					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue enhancing Modeling and Simulation environment for collaborative technique development across a multidisciplinary team of industry and government performers. - Continue development of assured cyber capabilities with algorithm research, data collection, model development, and metrics identification. - Continue executing implementation studies for new mission profiles and software architecture design. - Continue developing Concepts of Operation and Employment in conjunction with stakeholders. - Continue planning for bench tests of integrated hardware and software products. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no change in the investment from FY 2026 to FY 2027.					
Title: Persistent Menace	0.000	8.000	9.500	0.000	9.500
Articles:	-	-	-	-	-
FY 2026 Plans: Persistent Menace - Initiate systems engineering design for enhanced offboard decoy command and control architecture. - Initiate Concept of Operation and implementation studies for distributed Electronic Warfare (EW) techniques. - Initiate development of tactical network solution to support multi-platform coordination. ***FY 2027 Base Plans:*** Persistent Menace - Continue the Persistent Menace FNC by beginning the design of the offboard decoy command and control waveform. - Continue Concept of Operation and develop models to simulate distributed Electronic Warfare (EW) techniques. - Continue development and begin prototyping of the tactical network solution to support multi-platform coordination. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase from FY 2026 to FY 2027 is due to model development and the initiation of prototyping activities for the tactical network solution.					
Title: GRAVITAS ***Articles:*** ***FY 2026 Plans:*** GRAVITAS - Initiate the GRAVITAS FNC by defining the requirements and initiating development of the software-based, federated, gravity navigation filter, external to the existing INS Kalman filter, to compare sensed gravity anomaly to the gravity anomaly map. - Initiate software-processed INS acceleration data matched to the map's gravity anomaly data for position. - Initiate algorithm refinement and integration into real time code. ***FY 2027 Base Plans:*** GRAVITAS - Continue development of the software-based, federated, gravity navigation filter, external to the existing INS Kalman filter, to compare sensed gravity anomaly to the gravity anomaly map. - Continue and Implement updated/new software-processed INS acceleration data matched to the map's gravity anomaly data for position. - Continue integration into real time code. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no change to the investment in this FNC from FY 2026 to FY 2027.	0.000 -	3.200 -	3.200 -	0.000 -	3.200 -
Title: Intra-Theater Distribution (ITD) ***Articles:*** ***FY 2026 Plans:*** Intra-Theater Distribution (ITD) - Initiate joint and coalition partnership logistics data requirements to support distribution and sourcing supply chain analyses. - Initiate user interface requirements to support echelon II and III Intra-Theater Distribution planning. - Initiate design and development of a cloud based joint logistics data model to support Intra-Theater Distribution.	0.000 -	5.300 -	6.800 -	0.000 -	6.800 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate design and development of optimization algorithms that can scale and solve theater sourcing and distribution problems in less than 20 minutes. ***FY 2027 Base Plans:*** Intra-Theater Distribution (ITD) - Continue to develop and ingest joint and coalition partnership logistics data to support distribution and sourcing supply chain analyses. - Continue to develop a Joint and Coalition Forces Intra- Theater Distribution planner that optimizes air, sea, and land connectors to deliver PAX and classes of supplies to operational units in a contested maritime environment. - Continue to develop analytics to quantify risk and uncertainty for the movement, maneuver, and sustainment of maritime afloat forces and joint forces operating within a contested maritime environment. - Initiate development to model adversary attacks on US and Coalition supply chain. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the development of analytics to quantify risk and uncertainty, and the beginning of model development for adversary attacks on the supply chain.					
Title: Leprecaun Trap	0.000	0.000	11.024	0.000	11.024
Articles:	-	-	-	-	-
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** Leprecaun Trap - Initiate data collection and Modeling and Simulation environment for collaborative technique development across a multidisciplinary team of industry and government performers. - Initiate development of assured cyber capabilities with signal processing algorithm research, environmental characterization, and metrics identification. - Initiate hardware, software, and communications architecture design and development. - Initiate Concepts of Operation and Employment in conjunction with stakeholders. - Initiate planning for spiral testing of integrated hardware and software products. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Title: RED ZONE ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Red Zone - Initiate collaborative development environment for technique development across a multidisciplinary team of industry and government performers. - Initiate development of sensing techniques, optimization algorithms, mission planner, and metrics. - Initiate hardware, software, and communications architecture design and development. - Initiate Concepts of Operation and Employment in conjunction with stakeholders. - Initiate planning for spiral testing of integrated hardware and software products. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.	0.000 -	0.000 -	9.434 -	0.000 -	9.434 -
Title: Advanced 5G Security and Controlled Emission for the Naval Domain (ASCEND) ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Advanced 5G Security and Controlled Emission for the Naval Domain (ASCEND)	0.000 -	0.000 -	8.000 -	0.000 -	8.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1163 / *Information Warfare (IW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate security improvements of COTS 5G for tactical operations. - Initiate development of novel waveforms that can be hosted on 5G COTS infrastructure. - Initiate development of novel sub-6 GHz array technology for tactical platforms. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Accomplishments/Planned Programs Subtotals	58.730	68.211	84.995	0.000	84.995

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1164 / *Surface Warfare (SW)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1164: *Surface Warfare (SW)*	0.000	46.184	82.716	92.196	-	92.196	71.427	19.644	0.000	0.000	0.000	312.167
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Surface Warfare Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include technologies that will provide mission visualization, network analysis, and training for operators in denied and degraded environments.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Surface Warfare	46.184	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Surface Warfare Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include technologies that will provide mission visualization, network analysis, and training for operators in denied and degraded environments.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Title: Odysseus	0.000	5.800	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: Odysseus - Complete final packaging of the Odysseus source that meets size, weight, power and cooling. - Complete and deliver a Technical Data Package (TDP) level 2 with the Odysseus source.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete the final analysis and report of system performance. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Crossbow ***Articles:*** ***FY 2026 Plans:*** Crossbow - Complete software coding for the Maritime Dynamic Targeting (MDT) Battle Management Aid (BMA) to support prioritized kill chains. - Complete and document machine learning training data for dynamic weapons quality track custody algorithms within the MDT BMA. - Complete and conduct a demonstration of MDT BMA software with group of operators, who are representative of the end users. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.	0.000 -	7.500 -	0.000 -	0.000 -	0.000 -
Title: Radar Advanced Signal Processing (RASP) ***Articles:*** ***FY 2026 Plans:*** Radar Advanced Signal Processing (RASP) - Continue the RASP FNC by finalizing software implementation of candidate algorithms for execution on a heterogeneous processing framework.	0.000 -	7.883 -	2.800 -	0.000 -	2.800 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Conduct testing of algorithms through combination of Modeling and Simulation (M&S), hardware-in-the-loop testing, and limited over-the-air tests. ***FY 2027 Base Plans:*** Radar Advanced Signal Processing (RASP) - Complete the RASP FNC by incorporating GPU processing subsystems into representative hardware and characterize with hardware-in-the-loop testing, with limited over-the-air tests. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the wind down of this FNC as it approaches completion in FY 2027.					
Title: Advanced Non-Kinetic Evaluation for Re-engagement (ANKER)	0.000	10.815	12.135	0.000	12.135
Articles:	-	-	-	-	-
FY 2026 Plans: Advanced Non-Kinetic Evaluation for Re-engagement (ANKER) - Continue the ANKER FNC by completing the Concept of Operation and implementation studies with stakeholder organizations so as to guide the development, integration, test and transition of algorithms and capabilities for non-kinetic effectiveness. - Continue model-based systems engineering design and operator workflows for integration into existing systems to provide naval capabilities for real-time non-kinetic effectiveness feedback with industry and government performers. - Continue development of software products to enhance non-kinetic effectiveness employment and feedback through algorithm research, data collection, model development, and metrics definition. - Continue comparative algorithm characterization in modeling and simulation environment to study impacts on non-kinetics feedback functionality in identified naval systems. - Conduct experimentation in LVC environment. ***FY 2027 Base Plans:*** Advanced Non-Kinetic Evaluation for Re-engagement (ANKER)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete model-based systems engineering design and operator workflows for integration into existing systems to provide naval capabilities for real-time non-kinetic effectiveness feedback with industry and government performers. - Complete development of software products to enhance non-kinetic effectiveness employment and feedback through algorithm research, data collection, model development, and metrics definition. - Complete comparative algorithm characterization in modeling and simulation environment - Complete FNC transition (Software and Knowledge products) to the Integrated Combat System (ICS) Program of Record. - Initiate a final Demonstration At-Sea (or LVC if fleet assets cannot support) ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is primarily due to the cost of conducting a final Demonstration At-Sea.					
Title: Joint Highly intelligent Automation to Accelerate Weapon Kills (J-HAAWK)	0.000	7.551	6.937	0.000	6.937
Articles:	-	-	-	-	-
FY 2026 Plans: Joint Highly intelligent Automation to Accelerate Weapon Kills (J-HAAWK) - Continue development of J-HAAWK algorithms and the demonstration of the basic Predictive Engagement Assessment (i.e., ingestion/filtering and basic target dynamic prediction). - Perform demonstration of the J-HAAWK system integrated into two weapon systems in simulated engagements. - Ingest real-time track information via the system track manager/track server module. - Initiate development of algorithms and the demonstration of the interface/communications from the Engagement Completion Assessment. ***FY 2027 Base Plans:*** Joint Highly intelligent Automation to Accelerate Weapon Kills (J-HAAWK) - Continue the J-HAAWK FNC by Demonstrating and testing the Predictive Engagement Assessment algorithm (i.e., ingestion/filtering and basic target dynamic prediction). - Continue to perform demonstration of the J-HAAWK system integrated into two weapon systems in simulated engagements. - Continue and train the algorithms using datasets from real world events and test range data.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate development of the second algorithm, Engagement Completion Assessment, and the demonstration of the interface/communications to the combat system. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to a small decrease in the level of software development activity in FY 2027.					
Title: Sensor and Missile Management Against Robust Threats (SMMART) ***Articles:***	0.000 -	8.250 -	16.000 -	0.000 -	16.000 -
FY 2026 Plans: Sensor and Missile Management Against Robust Threats (SMMART) - Initiate development of artificial intelligence and machine learning (AI/ML) informed terminal defense algorithms that will provide robust missile/target pairing and distributed dynamic sensor resource management. - Initiate development and testing of algorithms using Deep Reinforced Learning (DRL) to reduce the decision search space needed for sensor-weapon pairing decisions in support of the force mission while reducing the operator's decision time and workload. ***FY 2027 Base Plans:*** Sensor and Missile Management Against Robust Threats (SMMART) - Continue development of artificial intelligence and machine learning (AI/ML) informed terminal defense algorithms that will provide robust missile/target pairing and distributed dynamic sensor resource management. - Continue development and testing of algorithms using Deep Reinforced Learning (DRL) to reduce the decision search space needed for sensor-weapon pairing decisions in support of the force mission while reducing the operator's decision time and workload. - Initiate integration level maturation activities using a Forge Development Environment (FDE). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase from FY 2026 to FY 2027 is due to a planned ramp-up of algorithm development and testing for this FNC in its second year and the conduct of integration level maturation activities in a Forge Development Environment.					
Title: Progressive, Assisted Decision-Making, Re-Planning and Execution for UxS (PADRE) ***Articles:*** ***FY 2026 Plans:*** Progressive, Assisted Decision-Making, Re-Planning and Execution for UxS (PADRE) - Initiate defining requirements for autonomy that will reside in UxS control workstations to help strike groups manage autonomous systems during tactical operations. - Initiate development of Command and Control (C2) autonomy software. - Initiate Human Machine Interface (HMI) design and development enabling UxS operators to rapidly assess Courses of Action for transfer of tactical control. ***FY 2027 Base Plans:*** Progressive, Assisted Decision-Making, Re-Planning and Execution for UxS (PADRE) - Continue requirements definition for mission autonomy to inform scalable, platform-agnostic UxS command-and-control (C2). - Continue development of C2 autonomy software to enable dynamic mission planning and execution across domains. - Continue operator-centered design efforts focused on Fleet mission-informed interfaces and enabling explainable AI for effective warfighter decision support during tactical missions. - Continue engagement with Fleet operators to shape intuitive user interfaces and validate Transfer of Tactical Control (TOTC) workflows. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no change to the investment in this FNC from FY 2026 to FY 2027.	0.000 -	5.000 -	5.000 -	0.000 -	5.000 -
Title: Joint Beam Control System (JBCS) ***Articles:*** ***FY 2026 Plans:*** Joint Beam Control System (JBCS)	0.000 -	10.000 -	15.000 -	0.000 -	15.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate the Joint Beam Control System (JBCS) FNC by defining joint (Army/Navy) requirements and initiating the development of a standardized beam control system for high energy laser weapon systems. - Initiate development of mature beam control, pointing, stabilization, propagation, aimpoint maintenance and advanced tracking. - Initiate development of mature optical systems. - Initiate development of mature beam conditioning and diagnostics system. ***FY 2027 Base Plans:*** Joint Beam Control System (JBCS) - Continue Joint Beam Control System (JBCS) development of mature beam control, pointing, stabilization, propagation, aimpoint maintenance and advanced tracking. - Continue development of mature optical systems. - Continue development of mature beam conditioning and diagnostics system. - Initiate building and testing of the JBCS subassemblies for high energy laser weapon systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the initiation of efforts to build and test the JBCS subassemblies for high energy laser weapon systems.					
Title: Afloat Data Analysis and Persistent Transmission (ADAPT)	0.000	7.000	9.000	0.000	9.000
Articles:	-	-	-	-	-
FY 2026 Plans: Afloat Data Analysis and Persistent Transmission (ADAPT) - Initiate design of system architecture to accelerate tactical sensor performance analysis and event reconstruction. - Initiate Concept of Operation and implementation studies for shipboard data collection, management, and transport. - Initiate selection of industry and government performers to develop, integrate, and test components of automated data analysis pipeline. ***FY 2027 Base Plans:*** Afloat Data Analysis and Persistent Transmission (ADAPT)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue the ADAPT FNC by conducting Concept of Operation and implementation studies for shipboard data collection, management, and transport. - Continue design and begin development and implementation of the system architecture to accelerate tactical sensor performance analysis and event reconstruction. - Complete selection of industry and government performers to develop, integrate, and test components of automated data analysis pipeline. - Initiate algorithm development for automated shipboard data analysis and filtering at the tactical edge. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to development and implementation of the system architecture and the beginning of algorithm development for automated shipboard data analysis and filtering.					
Title: Subarray Transmit Orthogonality for Receive Multiplexing (STORM)	0.000	7.500	10.000	0.000	10.000
Articles:	-	-	-	-	-
FY 2026 Plans: Subarray Transmit Orthogonality for Receive Multiplexing (STORM) - Initiate development of sensor support allocations and algorithms for the compact effector community. - Initiate development of dynamic array segmentation algorithms for large, phased array apertures. ***FY 2027 Base Plans:*** Subarray Transmit Orthogonality for Receive Multiplexing (STORM) - Continue development of sensor support allocations and algorithms for the compact effector community. - Continue development of dynamic array segmentation algorithms for large, phased array apertures. - Begin demonstrating completed components of the sub-array level control systems. - Ramp up engineering activities associated with directional modification systems. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase from FY 2026 to FY 2027 is due to development activities associated with demonstrating completed components of the sub-array level control systems and the ramp-up of directional modification systems engineering.					
Title: Multi-Spectral High Resolution Targeting Sensor (MUST HITS) ***Articles:*** ***FY 2026 Plans:*** Multi-Spectral High Resolution Targeting Sensor (MUST HITS) - Complete this FNC originally planned to finish in FY25 by finishing integration of the camera and processing suite. - Complete the wideband optics build. - Complete shipboard installation of the advanced camera. - Complete and deliver digital drawings and model files to the acquisition program of record and conduct shipboard and field testing. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.	0.000 -	2.400 -	0.000 -	0.000 -	0.000 -
Title: SPEIR-HELIOS Improvements Merging Environmental Response (SHIMMER) ***Articles:*** ***FY 2026 Plans:*** SPEIR-HELIOS Improvements Merging Environmental Response (SHIMMER) - Initiate refinement of the prototype battle management aid based on the human-systems interface studies. - Initiate field test planning to validate prototype end-to-end accuracy performance. ***FY 2027 Base Plans:*** SPEIR-HELIOS Improvements Merging Environmental Response (SHIMMER) This FNC is being accelerated, FY27 will support: - Continue refinement of the prototype battle management aid based on the human-systems interface studies	0.000 -	3.017 -	3.229 -	0.000 -	3.229 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Conduct field test to validate prototype end-to-end accuracy performance ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC in the process. It is being accelerated and leverages investments previously made in the FNC Applied Research PE 0602750N. This is not a new start.					
Title: Leaker Engagement with Autonomous Defenses at Extended Ranges (LEADER) ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Leaker Engagement with Autonomous Defenses at Extended Ranges (LEADER) - Initiate the definition of the requirements and architecture for the LEADER system, identifying Artificial Intelligence (AI) and autonomy algorithms that will enable improved efficacy of relevant shipboard weapons. - Initiate maturation of necessary AI and autonomy algorithms and rigorously verify their performance via lab-based testbeds and live fire experiments. - Initiate exploration into novel sensing technologies to further enhance weapon performance. - Initiate collaboration with the Acquisition Program Office partner for early planning in support of shipboard certification, Weapon System Explosives Safety Review Board (WSESRB) review, and sustainment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.	0.000 -	0.000 -	5.989 -	0.000 -	5.989 -
Title: Light Rider ***Articles:*** ***FY 2026 Plans:***	0.000 -	0.000 -	6.106 -	0.000 -	6.106 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1164 / *Surface Warfare (SW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** Light Rider - Initiate the Light Rider FNC by defining the requirements and an architecture to meet the program objectives for the Light Rider shipboard kill chain. - Initiate maturation of existing key Artificial Intelligence (AI) and autonomy algorithms, and identify and develop new algorithms that will enable the creation of the Light Rider kill chain per defined requirements. - Initiate maturation of a specialized data link required for the operation of the Light Rider kill chain. - Initiate lab-based and live fire experimentation events to iteratively mature system prototypes towards the final system requirements. - Initiate collaboration with the Acquisition Program Office partner for early planning in support of shipboard certification, Weapon System Explosives Safety Review Board (WSESRB) review, and sustainment. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.					
Accomplishments/Planned Programs Subtotals	46.184	82.716	92.196	0.000	92.196

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 1165 / *Undersea Warfare (UW)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1165: *Undersea Warfare (UW)*	0.000	60.433	53.902	42.016	-	42.016	26.528	16.695	0.000	0.000	0.000	199.574
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Undersea Warfare Project focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include improvements to a broad range of undersea warfare capabilities, including undersea weapons, submarine acoustic sensing and signal processing systems, communications, electro-optics systems, signature management, training, and decision aids.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Undersea Warfare	60.433	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Undersea Warfare Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N, Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts include improvements to a broad range of undersea warfare capabilities, including undersea weapons, submarine acoustic sensing and signal processing systems, communications, electro-optics systems, signature management, training, and decision aids. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: VIRGINIA Improved Propulsor Bearing (VIPB)	0.000	8.075	6.550	0.000	6.550
Articles:	-	-	-	-	-
FY 2026 Plans: VIRGINIA Improved Propulsion Bearing (VIPB) - Continue full-scale VIRGINIA Class bearing manufacture and complete fabrication in 2027.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate planning for bearing land-based testing. - Initiate at-sea demonstration planning for VIRGINIA Class. - Continue development of component and coupled shaft-line models. ***FY 2027 Base Plans:*** VIRGINIA Improved Propulsion Bearing (VIPB) - Continue the VIPB FNC by completing full scale VIRGINIA Class bearing manufacture. - Complete planning and initiate bearing land-based testing. - Continue at-sea demonstration planning on VIRGINIA Class submarine. - Complete development of component and coupled shaft-line models. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to completing in FY 2026, most of the development associated with the manufacture of the full-scale VIRGINIA Class bearing and the component and coupled shaft-line models.					
Title: Multi-Material Propeller Prototype (M2P2)	0.000	1.316	2.040	0.000	2.040
Articles:	-	-	-	-	-
FY 2026 Plans: Multi-Material Propeller Prototype (M2P2) - Continue the M2P2 FNC by manufacturing the Navy approved multi-material rotor design (full scale 3-blade/ hub prototype). Leverage building block components that are representative of multi-material features to evaluate mechanical assembly and reduce risks during full-scale manufacturing of the unique design. - Complete facility preparations and test plans in accordance with the NAVSEA approved qualification approach for testing the full-scale 3-blade/hub prototype and multi-material structural design. - Continue specification and fabrication of large-scale (1/3) rotors representing the M2P2 for testing on the Large-Scale Vehicle (LSV) model at the Acoustic Research Detachment (ARD) in Bayview, ID. Conduct test preparations at ARD including modifications to LSV. ***FY 2027 Base Plans:*** Multi-Material Propeller Prototype (M2P2)					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete the M2P2 FNC by manufacturing the approved M2P2 multi-material rotor design (full-scale 3-blade/ hub prototype) and deliver it to NSWC Carderock Div. for fatigue testing in a specially outfitted test facility for long term fatigue testing which will verify its structural integrity. - Complete fabrication of large-scale (1/3) rotors representing the M2P2 for testing on the Large-Scale Vehicle (LSV) model at the Acoustic Research Detachment (ARD). Complete test preparations at ARD including modifications to LSV. - Initiate and Conduct acoustic trials at ARD with large scale rotors representing both the approved M2P2 concept and a hydrodynamically matched conventional rotor for comparisons to baseline rotor designs already in service and tested at the same facility. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the initiation and conduct of acoustic trials at the Acoustic Research Detachment (ARD).					
Title: Own Ship Acoustic Monitoring (OSAM)	0.000	6.636	4.234	0.000	4.234
Articles:	-	-	-	-	-
FY 2026 Plans: Own Ship Acoustic Monitoring (OSAM) - Continue the OSAM FNC by conducting analysis of the data collected during the FY25 at-sea demo on a VIRGINIA Class submarine to verify the monitoring system achieves performance objectives and to verify software functionality in an at-sea environment. - Finalize plans for a final at-sea demo on a VIRGINIA Class submarine, including the post-demo data analysis to validate system meets performance metrics. - Continue development of a prototype vulnerability decision aid. ***FY 2027 Base Plans:*** Own Ship Acoustic Monitoring (OSAM) - Complete and conduct the final at-sea demo on a VIRGINIA Class submarine to verify the prototype monitoring system functions in an at-sea environment. - Complete and conduct analysis of final at-sea demo data to verify FNC performance criteria have been met.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete prototype vulnerability decision aid. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the planned ramp-down of development efforts as this FNC approaches completion in FY 2027.					
Title: Gravity-Aided Inertial Navigation system (GAINS) ***Articles:*** ***FY 2026 Plans:*** Gravity-Aided Inertial Navigation system (GAINS) - Complete the GAINS FNC by completing the preliminary design review. - Test updated/new hardware with integrated software for gravity algorithms to correct position fix and deflection of vertical. - Complete the Critical Design Review. - Continue Concept of Operation and implementation studies for a new mission profile. - Conduct integration and testing of a new gravimeter for the navigation subsystem on a test ship. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.	0.000 -	5.000 -	0.000 -	0.000 -	0.000 -
Title: Physical and Networking Layer Prototype (PNLP) ***Articles:*** ***FY 2026 Plans:*** Physical and Networking Layer Prototype (PNLP) - Complete system integration and in-water events. - Complete the final system demonstration for transition to the program of record. ***FY 2027 Base Plans:***	0.000 -	2.900 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to the completion of this FNC in FY 2026.					
Title: Next Generation Stern Area System (Next Gen SAS)	0.000	5.736	2.340	0.000	2.340
Articles:	-	-	-	-	-
FY 2026 Plans: Next Generation Stern Area System (Next Gen SAS) - Continue the Next Gen SAS FNC by completing development of algorithms to provide new capabilities using Stern Area System hardware. - Complete laboratory testing to assess hardware performance with new algorithms, and to verify software and hardware integration. - Complete and conduct large-scale in-water test and data analysis to assess system performance. - Complete assessment and modification to VIRGINIA SAS software to incorporate new algorithms. - Initiate planning for an at-sea test of Next Gen SAS software on a VIRGINIA Class submarine to demonstrate a new SAS capability. ***FY 2027 Base Plans:*** Next Generation Stern Area System (Next Gen SAS) - Complete the Next Gen SAS FNC by finishing laboratory tests to confirm Next Gen SAS software functionality for at-sea demo on a VIRGINIA class submarine. - Complete at-sea test of Next GEN SAS software on a VIRGINIA Class submarine to demonstrate a new SAS capability. - Initiate an analysis of data collected during the Next Gen SAS at-sea demonstration. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The decrease from FY 2026 to FY 2027 is due to the planned ramp-down of development efforts as this FNC approaches completion in FY 2027.					
Title: Rough Neptune	0.000	8.415	7.415	0.000	7.415
Articles:	-	-	-	-	-
FY 2026 Plans: Rough Neptune - Continue the Rough Neptune FNC by initiating development of an imaging mast solution for single mast utilization. - Start developing a modified High Data Rate (HDR) mast solution for the submarine HDR mast. - Continue development and integration of a phased array for HDR, Mine Countermeasure (MCM), and Multifunction Modular Mast (MMM) mast payloads. - Perform at sea tests with an MCM mast to validate CONEMPS and TTPs. - Develop, install, and train a watch floor component in the SUBPACFLT AOR and SUBLANTFLT AOR. - Conduct an at-sea demonstration with new data products via Radiant Valkyrie workstation.					
FY 2027 Base Plans: Rough Neptune - Complete development of an imaging mast solution for single mast utilization. - Complete development of a modified High Data Rate (HDR) mast solution for the submarine HDR mast. - Complete development and integration of a phased array for High Data Rate HDR, Mine Countermeasure (MCM), and Multifunction Modular Mast (MMM) payloads. - Complete at sea tests with an MCM mast on a PACFLT asset. - Complete development, installation, and training for a watch-floor component in SUBPACFLT AOR. - Complete an at-sea demonstration with new data products via Radiant Valkyrie workstation.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement: The decrease from FY 2026 to FY 2027 is due to the planned ramp-down of development efforts as this FNC approaches completion in FY 2027.					
Title: Wide Arc Swath Profiler (WASP)	0.000	8.660	8.630	0.000	8.630
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: WASP - Wide Arc Swath Profiler - Initiate the WASP FNC by finalizing the electronics design and beginning fabrication of the electronics for the WASP system. - Fabricate ceramic array modules for the transmit and receive arrays. - Assemble an initial set of full arrays. - Develop software for integration into the system and begin torpedo software development. - Fabricate the preliminary WASP system for testing. ***FY 2027 Base Plans:*** WASP - Wide Arc Swath Profiler - Continue the WASP FNC by finalizing the electronics design and beginning fabrication of the electronics for the WASP system. - Continue to fabricate ceramic array modules for the transmit and receive arrays. - Continue to assemble an initial set of full arrays. - Continue development of software for integration into the system and begin torpedo software development. - Continue to fabricate the preliminary WASP system for testing. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The small decrease from FY 2026 to FY 2027 does not represent a significant change to the investment in this FNC.					
Title: Steels for Performance, Expanded Envelope and Durability (SPEED)	0.000	7.164	3.016	0.000	3.016
Articles:	-	-	-	-	-
FY 2026 Plans: Steels for Performance, Expanded Envelope, and Durability (SPEED) - Initiate development of the mechanical and metallurgical testing plan for industrial-scale base material and weld consumables of 10Ni steel. - Initiate testing for static and dynamic mechanical properties, metallurgical evolution, and corrosion behavior. - Initiate testing for a range of material specifications based on shipyard fabrication process plans. ***FY 2027 Base Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Steels for Performance, Expanded Envelope, and Durability (SPEED) - Continue development of the mechanical and metallurgical testing plan for industrial-scale base material and weld consumables of 10Ni steel. - Continue testing for static and dynamic mechanical properties, metallurgical evolution, and corrosion behavior. - Continue testing for a range of material specifications based on shipyard fabrication process plans. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease from FY 2026 to FY 2027 is due to a development plan that required large material purchases in the first year (FY 2026) to keep development and testing on track in the second year (FY 2027).					
Title: Alternative Hull Concepts (HULC) ***Articles:*** ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Alternative Hull Concepts (HULC) - Initiate development of advanced hull structural configurations. - Initiate material optimization experiments. - Initiate development of modeling and simulation tools to predict hull response. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to the selection of this FNC to initiate in FY 2027 due to promising technology maturation from applied research investments previously made in BA 02 in 0602750N. This is not a new start.	0.000 -	0.000 -	7.791 -	0.000 -	7.791 -
Accomplishments/Planned Programs Subtotals	60.433	53.902	42.016	0.000	42.016

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 1165 / *Undersea Warfare (UW)*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 2966 / *S&T Campaigns*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2966: *S&T Campaigns*	0.000	0.000	167.853	134.808	-	134.808	142.483	177.139	169.484	194.111	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

This Project is a collection of all Projects previously funded in PE 0603801N INNOVATIVE NAVAL PROTOTYPES (INP) ADV TEC DEV and was formed as part of the PE Consolidation initiative for alignment to SECNAV's S&T Strategy.

A. Mission Description and Budget Item Justification

The S&T Campaigns Project contains the Budget Activity 3 portion of the Innovative Naval Prototype (INP Program). INP efforts attempt to solve problems and respond to mission requirements, by exploratory research for new ideas and breakthrough capabilities. INPs are Larger in scope, scale and risk and are selected for their high-payoff and potential to revolutionize operational concepts. Due to high technical risk, INPs often have long trial-and-error timeframes to work through challenges, but typically no more than three years between decision points. INP BA3 efforts require advanced technology development funding to bridge from Applied Research to working prototypes. INPs prove technological and capability potential, validate production feasibility, and acquisition potential. ONR demonstrates INPs with field experiments and or tests in a simulated environment as aligned to BA 03. Successful experimentation and demonstrations present the Department of the Navy with disruptive capabilities that may lead to a new acquisition programs. INPs are selected by senior leadership in the Department of the Navy.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: METEOR	0.000	19.200	2.600	0.000	2.600
Articles:	-	-	-	-	-
Description: Navy surface combatants have Capability/capacity gaps to defend against high volume attacks in Integrated Air and Missile Defense (IAMD). The objective of METEOR is to demonstrate tactically significant, non-kinetic, High Power Microwave (HPM) payload integration onto Naval platforms to defeat, track, engage and assess operational threats while assessing integrated sensors and weapon control options. The METEOR HPM weapon development will provide capability with low cost-per-shot, deep magazine, tactically significant range, short time engagement for multi-target approach, dual deception and defeat capability. This Innovative Naval Prototype (INP) will assess the military utility of a ship-based Integrated Air and Missile Defense (IAMD) HPM weapon, to develop performance requirements via effects and lethality studies, to evaluate current HPM prototype hardware for those requirements, and to mature promising HPM technologies. To assess military utility as part of layered defense in stressing scenarios, METEOR will quantify effectiveness against priority threats, evaluate Battle Damage Assessment (BDA) techniques, and perform mission modeling.					
FY 2026 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Complete the METEOR INP by completing the following tasks: - Design and analysis of automated engagement algorithms to reduce time between engagements - Additional pulsed power and HPM source technology development for future technological assessment in subsystem laboratory level tests, building upon prior REDCAT and earlier applied research efforts - High Power Microwave Test Bed functional checkout at sub system level and system level test series - Test bed evaluation in laboratory environment of candidate technologies that provide lighter weight, more compact or lower cost solutions for future increments - Embedded control and weapon console software development and test for future integration into ship combat system - Electromagnetic interference (EMI) measurements and integrated topside design analysis of candidate ship installation location - Integration of residual REDCAT hardware into METEOR laboratory test bed - Shipboard antenna analysis for integration onto ship - Mission modeling and effects refinement to inform conceptual system design for future increment - System engineering products to support ship installation activities - System reconfiguration into shipboard installation reinforced structure - Prototype ship integration system safety analysis - Complete the construction of a surrogate test structure to support verification of form, fit, function of the HPM prototype to support all land-based test series - Modify major subsystems to ensure resilience and operational effectiveness in challenging platform environments - Conduct full system Phase I static and dynamic test series - Prepare for Phase II combat system integration and dynamic system testing series					
FY 2027 Base Plans: Complete the METEOR INP by finishing the following tasks: - Integrate with platform combat system to validate communication protocols and ensure alignment with onboard sensor systems - Perform comprehensive testing to verify power output performance across operational ranges - Execute full-power testing against representative targets with surrogated threat components to demonstrate effectiveness - Conduct system performance sensitivity testing, component updates, and failure rate analysis					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete development and delivery of technical data package necessary to inform operational capability ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to completion all phases of full system integration and testing.					
Title: Full Spectrum Undersea Warfare (FSUSW)	0.000	22.416	16.840	0.000	16.840
Articles:	-	-	-	-	-
Description: The Full Spectrum Undersea Warfare (FSUW) Activity will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. This INP focuses on Theatre Undersea Warfare (TUSW), Joint Targeting and Strike, and Subsea and Seabed Warfare (SSW). There are five thrust areas of the FSUW INP that are key to enabling Chief of Naval Operations Guidance (CNOG), Distributed Maritime Operations (DMO), and the Commandant's Stand in Force with manned and unmanned warfighting capability. These thrust areas were specifically chosen in direct collaboration with STRATCOM, INDO-PACOM, Fleet and Undersea Warfare Commanders and validated with regular Flag engagements. These advanced technology developments will enable future undersea weapon systems (e.g., Maritime Strike Tomahawk and ADCAP variants), COCOM campaign, and operational plans. FSUW thrust areas include 1) Undersea effectors, 2) Integrated expeditionary subsea system of systems, 3) Multi-Vehicle Torpedo Tube Development System (MVTTDS) for payload A, 4) Undersea UAV for Over-The-Horizon (OTH) effects and 5) Undersea Launched Devices to enable Commanding Officers and Regional Combatant Commander effects. The thrust areas are technically an operational interconnected. Selected concepts from applied research are integrated into viable representative prototypes for field experimentation in a relevant environment. Lessons learned from field experimentation inform continued advanced technology development spirals to remedy technical shortcomings, expand capability, or define alternate approaches. Information security concerns preclude fully detailed descriptions of project efforts, research activities, and technology development plans. Specific information on each project and activity will be provided separately to the Congressional oversight committees. ***FY 2026 Plans:*** Continue the Full Spectrum Undersea Warfare INP by working the following tasks:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Advanced Technology Development associated with the Multi-Vehicle Torpedo Tube Deployment System (MVTTDS) prototype for Virginia Class submarines, which includes Revolver and Reloader including at sea (on a submarine) Revolver prototype testing and model validation - Spiral development build of GEN 2 Revolver, incorporating capability improvements for objective payloads - Complete design of GEN 2 Reloader design - Complete advanced development of components and system for at sea operations, including resiliency and reliability of 3-inch Submarine Launched UAV hardware and software for select missions. - Initiate build of GEN 2 Revolver - Initiate Testing of GEN 1 Revolver with UAV and decoy devices ***FY 2027 Base Plans:*** Continue the Full Spectrum Undersea Warfare INP by working the following tasks: - Advanced Technology Development associated with the Multi-Vehicle Torpedo Tube Deployment System (MVTTDS) prototype for Virginia Class submarines, which includes Revolver and Reloader including at sea (on a submarine) Revolver prototype testing and model validation - Continue build of GEN 2 Revolver - Continue Testing of GEN 1 Revolver with UAV and decoy devices Complete advanced development of components and system for at sea operations, including resiliency and reliability of 3 inch Submarine Launched effects buoy. Initiate, using MVTTDS, at sea testing of 6 inch Submarine Launched effects buoy. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to re-aligning funds in FY 2026 to best phase the funds with the scope of advanced technology development in FY 2026 for this INP.					
Title: Long Range Targeting (LRT)	0.000	22.500	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Long Range Targeting emphasizes the specific naval use of HF Over the Horizon Radar (OTHR) on maritime platforms and forward-based positive identification technologies to fill gaps in long-range fires kill chains. Technologies within this activity will enable integrated long range naval fires. Investments include					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
technologies for OTH radar antennas, HF antenna arrays, signal processing, and electronic surveillance. This Activity specifically addresses Advanced Technology Development in support of the LRT INP effort. ***FY 2026 Plans:*** Complete the Long-Range Targeting INP by finishing the following tasks: - Development efforts to investigate High Frequency (HF) technologies for Over-the-Horizon (OTH) sensors to enable target detection, tracking, and identification - Design, build, and test the prototype Maritime Over-the-Horizon Radar (MOTHR) - Developing long range passive systems for long range target ID - Developing technologies to integrate various radar tracks and HF radar targets - System level testing and demonstration for Long Range Targeting using OTHR - System-level testing of prototype passive systems - Planning for final LRT Final Demonstration ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 in Long Range Targeting is due to program completion in FY 2026.					
Title: Deployment & Employment of Autonomous Long-Range Systems (DEALRS)	0.000	7.920	7.686	0.000	7.686
Articles:	-	-	-	-	-
Description: Adversary Anti-Access and Area Denial (A2/AD) capabilities continue to improve but remain focused on targeting specific US and joint force capabilities. The Deployment and Employment of the Autonomous Long-Range Systems (DEALRS) INP will develop technologies that sidestep, operate below the threshold, or deplete adversary A2/AD capabilities. DEALRS will specifically develop technologies to enable low-cost unmanned systems that can maneuver across theater-level ranges to penetrate, operate within, and launch strikes from within adversary A2/AD system coverage. This project will develop technologies to increase the range and endurance of autonomous systems while maintaining tactically relevant speeds, loiter times, and signatures with low cost. It will also address technologies that enable the marsupial launch of terminal engagement autonomous unmanned systems across all domains from larger and/or longer-range host					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
systems that bring them to the launch area and the associated technologies needed to ensure roboticized and autonomous startup and launch of the marsupial systems without human intervention. This Activity specifically addresses Advanced Technology Development in support of the DEALRS INP effort. ***FY 2026 Plans:*** Continue the DEALRS INP by working the following tasks: - Scaling up promising concepts to demonstrate trans-Oceanic deployment of low-cost attritable swarm agents and platforms. - Experimentation in large scale concept platforms for marsupial swarm delivery. Initiate - Experiments with expeditionary manufacturing approaches developed under MASS (Proj 3461) long-duration deployment of intermediate-scale platform as use-case. - Develop and experiment with long-duration employment of swarm multi-domain platforms. ***FY 2027 Base Plans:*** Complete the DEALRS INP by: - Complete scaling up promising concepts to demonstrate trans-Oceanic deployment of low-cost attritable swarm agents and platforms. - Complete experimentation in large scale concept platforms for marsupial swarm delivery. - Complete experiments with expeditionary manufacturing approaches developed under MASS (Proj 3461) long-duration deployment of intermediate-scale platform as use-case. - Complete development and experimentation with long-duration employment of swarm multi-domain platforms. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant change in funding from FY 2026 to FY 2027.					
Title: Manned and Autonomous Teams (MATes) ***Articles:*** ***Description:*** Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) INP is to develop autonomic robotic technology and collaborative autonomous	0.000 -	13.860 -	13.451 -	0.000 -	13.451 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. This activity specifically addresses Advanced Technology Development in support of the MATes INP effort.					
FY 2026 Plans: Continue the MATes INP by continuing all activities from FY25 to include those focused on: - Autonomy, perception, and command and control (C2) concepts for Manned and Autonomous Teams (MATES) conducting complex multi-domain operations in proximity to each other along a spectrum of missions. Missions range from fully autonomous to highly supervised requiring an agile optimization as real-world factors change. - Autonomy, perception, and command and control (C2) concepts for MATES conducting complex multi-domain operations in proximity to each other along a spectrum of missions. - Demonstration of multiple autonomy architectures across multiple domains conducting re-optimizing behaviors based on changing mission parameters and perception data. Agents will be Super Swarm (PRJ 3459) agents, and efforts will mutually inform tactical behavior, perception, and autonomy schemas. - Experiments to validate command and control with different levels of human oversight and trust. Initiate new following new tasks: - Experiments to sequentially "phase" C2 of massed Super Swarm agents from close-in, dense, tightly controlled areas with continuous network coverage out to the maximum range where fully autonomous behavior is expected. - Experiments to test Super Swarm (PRJ 3459) agents in scenarios requiring AI-enabled perception of current manned blue teammate behavior states, derivation of anticipated future states, and evaluation of potential reactions to state changes.					
FY 2027 Base Plans: Complete the MATES INP: - Completing autonomy, perception, and command and control (C2) concepts for MATES conducting complex multi-domain operations in proximity to each other along a spectrum of missions.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Completing demonstration of multiple autonomy architectures across multiple domains conducting re-optimizing behaviors based on changing mission parameters and perception data. - Completing experiments to validate command and control with different levels of human oversight and trust. - Completing experiments to sequentially "phase" C2 of massed Super Swarm agents from close-in, dense, tightly controlled areas with continuous network coverage out to the maximum range where fully autonomous behavior is expected. - Completing experiments to test Super Swarm (PRJ 3459) agents in scenarios requiring AI-enabled perception of current manned blue teammate behavior states, derivation of anticipated future states, and evaluation of potential reactions to state changes. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant change in funding from FY 2026 to FY 2027.					
Title: Chimera	0.000	36.731	45.540	0.000	45.540
Articles:	-	-	-	-	-
Description: Chimera is a classified effort with details available at a higher classification level. ***FY 2026 Plans:*** Continue development of the Chimera INP by: - Working Information Warfare advanced technology efforts. - Begin prototype development. - Detailed development details are available at a higher classification level. ***FY 2027 Base Plans:*** Continue development of Chimera by: - Working Information Warfare advanced technology efforts. - Prototype development and testing at larger scales. - Detailed development details are available at a higher classification level. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
The increase in funding from FY 2026 to FY 2027 is due to the maturation of the applied research in PE 0602792N / Project 1502, and the associated migration of efforts and planned increase in the advanced technology development investment in PE 0603673N, Project 2966. Additional details can be provided at a higher classification.					
Title: Precision Fire Control (PFC)	0.000	19.520	15.128	0.000	15.128
Articles:	-	25	-	-	-
Description: The Precision Fire Control (PFC) INP will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. It will develop a PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components. This Activity specifically addresses Advanced Technology Development in support of the PFC INP effort. ***FY 2026 Plans:*** Continue the PFC INP by working the following tasks: - Integration of multi-function data link (MFDL) 2 fire control element. - Procurement of 5 Hypervelocity Projectiles (HVP) and 20 Low-Cost Terminal Defense Missiles (LCTDM) flight test units and test targets. - Interceptor guidance testing with HVP and LCTDM. - Combat systems integration studies. - Complete combat systems integration studies. - Complete design and prototyping of Precision Fire-Control (PFC) Increment 2 fire control elements. ***FY 2027 Base Plans:*** Complete the Precision Fire Control INP by: - Integrating the Data Link Assisted Navigation (DLAN) Multi-Function Data Link (MFDL) fire control element. - Procuring 12 Low-Cost Terminal Defense Missiles (LCTDM) and 4 Hypervelocity Projectiles (HVP) flight test units and test targets.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Conducting interceptor guidance testing with Data Link Assisted Navigation (DLAN), Low-Cost Terminal Defense Missiles (LCTDMs), and Hypervelocity Projectiles (HVPs). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 in Precision Fire Control (PFC) is due to completion of integrating Multi-Function Data Link (MFDL) fire control element and the PFC final demonstration against surrogate threats.					
Title: FLight Advancement of Structures for Hypersonics (FLASH)	0.000	7.306	27.694	0.000	27.694
Articles:	-	-	-	-	-
Description: The Flight Advancement of Structures for Hypersonics (FLASH) Innovative Naval Prototype (INP) integrates advanced hypersonic vehicle technologies that will demonstrate the viability of the concept to be fielded as a surface-launched, tactical range, hypersonic strike capability. FLASH will design, develop, manufacture, and test a number of prototype flight vehicles to inform decisions concerning the FLASH capability. FLASH will address vehicle aerodynamic and thermal performance, structural performance, vehicle controllability, and affordability related to its technologies and assess compatibility with the Vertical Launch System (VLS) and the Virginia Payload Module (VPM). ***FY 2026 Plans:*** Initiate the FLight Advancement of Structures for Hypersonics (FLASH) INP by working the following tasks: - Conduct system engineering analyses to develop system functional and performance requirements. - Establish and manage the requirements baseline. - Perform system requirements decomposition to the subsystems. - Conduct a System Requirements and Design Review (SRDR). ***FY 2027 Base Plans:*** - Complete conducting system engineering analyses to develop system functional and performance requirements. - Complete establishing and managing the requirements baseline. - Complete performing system requirements decomposition to the subsystems. - Complete conducting a System Requirements and Design Review (SRDR). - Complete conducting a Preliminary Design Review (PDR).					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate design and fabrication of sub-scale sounding rocket flight test articles. - Initiate development of a structural system testbed to evaluate novel hypersonic control architectures. - Initiate prototyping of advanced control mechanisms and advanced high temperature seals. - Initiate detailed design of the full-scale flight test vehicle system. - Initiate integrating and qualifying sub-scale vehicle models for sounding rocket flight testing. - Initiate planning and executing sub-scale rocket flight tests to collect flight data on vehicle performance and control architectures. - Initiate performing laboratory testing of prototyped control mechanisms and advanced high temperature seals to assess performance and inform the full-scale vehicle design. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 reflects the transition from early system engineering and preliminary prototyping to detailed design, fabrication, and integrated testing of critical technologies. FY 2027 efforts include detailed design of the full-scale flight test vehicle, qualification of aerodynamic models, execution of sub-scale sounding rocket flight tests to validate hypersonic vehicle designs and control architectures, and prototyping with laboratory testing of advanced control mechanisms and advanced high temperature seal designs. These development and validation efforts drive higher material, fabrication, and flight-test costs as the program advances toward full-scale demonstration readiness.					
Title: Bright Eyes	0.000	0.000	5.869	0.000	5.869
Articles:	-	-	-	-	-
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** Initiate Bright Eyes by: - Integrating algorithms on a shore-based system and perform data collection activities to better understand capabilities and limitations of algorithms when integrated into test hardware. - Evaluating various new hardware configurations that provide overall best performance. ***FY 2027 OOC Plans:***					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase in funding from FY 2026 to FY 2027 is due to the initiation of this INP in Applied Technology Development beginning in FY 2027. This investment leverages investment previously made in the Applied Research PE 0602750N. This is not a new start.					
Title: Joint Laser Weapon System Science & Technology (JLWS-ST) ***Articles:***	0.000 -	18.400 -	0.000 -	0.000 -	0.000 -
Description: The Joint Laser Weapon System Science & Technology (JLWS-ST) Program is an INP-like investment that supports the Science and Technology (S&T) required to develop Laser Weapon System (LWS) prototypes for counter-missile defensive applications. The JLWS-ST initiative intends to mature Critical Technology Elements (CTEs) by integrating new High Energy Laser (HEL) subsystem technologies and components into prototype weapons for testing in Naval-relevant environments. The modernized weapon systems will inform overall joint operation strategy in coordination with other organizations. Funding provides an approach to procure existing LWS components, continue development of more capable technology for advanced threat defeat, and scale models that demonstrate feasibility of a containerized a 300+ kW HEL weapon prototype ready for Test & Evaluation (T&E) exercises. ***FY 2026 Plans:*** - Initiate and integration and testing plan for 300+ kW HEL source and appropriate components and sub-systems such as command and control and power/thermal. - Initiate procurement and integration of subsystems critical to HEL weapon operation such as power systems, thermal management, acquisition, and tracking components. - Initiate plans to support system demonstration during land test at White Sands Missile Range (WSMR). - Establish standardized common components to improve manufacturability and availability of parts for Laser Weapon System (LWS) procurement. - Initiate S&T support for intermediate capability LWS acquisition including sub-system level interfaces and components. - Initiate procurements of specified LWS components required for acquisition activities - Establish lethality Modelling & Simulation (M&S) techniques that illustrate technology feasibility while supported by field experiments and demonstrations. - Initiate integration of laser system architectures such as Modular Open Systems Architecture (MOSA) into new weapon system prototypes.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 2966 / *S&T Campaigns*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Mature Critical Technology Elements (CTEs), including critical subsystems and components, to enable Advanced Technology Development (ATD) of a ruggedized, marinized, and containerized 300+ kW prototype LWS. This investment was initiated in FY 2026 in this PE by the Office of the Under Secretary of Defense. FY 2027 through FY 2030 funds initially planned, were subsequently withdrawn. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** This investment was initiated in FY 2026 in this PE by the Office of the Under Secretary of Defense. FY 2027 through FY 2030 funds initially planned, were subsequently withdrawn, so this investment will complete in FY 2026.					
Accomplishments/Planned Programs Subtotals	0.000	167.853	134.808	0.000	134.808

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 3346 / *Future Naval Capabilities Adv Tech Dev*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3346: *Future Naval Capabilities Adv Tech Dev*	0.000	5.015	0.000	4.452	-	4.452	69.639	189.654	276.081	280.849	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Future Naval Capabilities (FNC) Program exploits technology advances and responds quickly to Naval needs. As a result, future Budget Activity (BA) 3 investments supporting the FNC Program are made less than one year before commencing execution. Because FNCs start at higher Technology Readiness Levels (TRL), the typical duration of an FNC is 3-years. The FNC Program favors a high level of collaboration. Program Element R-2 Activities align to warfare areas where the FNC technologies will be integrated into acquisition programs of record.

A complete accounting of FNC technologies and a full disposition of each technology development effort is provided annually to the Congressional oversight committees.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Capable Manpower (CMP)	5.015	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Capable Manpower R-2 Activity focuses on the advanced technology development of new capabilities that leverage the underlying applied research investments in Program Element (PE) 0602750N Future Naval Capabilities (FNC) Applied Research. These advanced technology investments align to acquisition programs of record. Efforts focus on all aspects of training, including accelerated learning, training environments, ready relevant training, and Live-Virtual-Constructive (LVC) training. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Title: FNC Advanced Tech Dev	0.000	0.000	4.452	0.000	4.452
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 3346 / *Future Naval Capabilities Adv Tech Dev*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The efforts described in this Activity address Advanced Technology Development associated with the Future Naval Capabilities (FNC) Program. FNCs deliver technology solutions to known requirements and accelerate innovative technology insertion into Programs of Record (PORs). A structured FNC process and its specific transition mechanisms manage technical risk and increase the likelihood that technologies systematically deploy to warfighters. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate advanced technology development for FNC technology solutions that will be delivered to increase the technological capability of one Programs of Record (PORs). ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The increase from FY 2026 to FY 2027 is due to new funding added to this PE in FY 2027 to develop additional technology solutions for transitions to Programs of Record (PORs).					
Accomplishments/Planned Programs Subtotals	5.015	0.000	4.452	0.000	4.452

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	7.723	67.575	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	75.298
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Carbon nanotube integration ***FY 2025 Accomplishments:*** Conduct carbon nanotube integration. ***FY 2026 Plans:*** N/A	2.896	0.000
Congressional Add: Electronic maneuver warfare unmanned sensors ***FY 2025 Accomplishments:*** Develop ES ISR sensors for Rough Casper Integrate New ISR Classifiers into Rough Squid Integrate Acoustic AI/ML processing into Rough Casper At Sea Testing Demonstration in FY26/27 Deliver 20-foot Rough Casper Conex Box Integrate and test New Correlation Algorithms Integrate and Test EO/IR AI/ML engines Integrate and test RF AI/ML Engines ***FY 2026 Plans:*** N/A	4.827	0.000
Congressional Add: Coherently-Combined Fiber Laser Arrays Without Wav ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Coherently-Combined Fiber Laser Arrays Without Wavefront sensing.	0.000	14.480
Congressional Add: Advanced Seeker Technology for Hypersonic Missiles ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Advanced Seeker Technology for Hypersonic Missiles.	0.000	4.827
Congressional Add: Low-Cost, Mass Producible, Hypersonic Long-Range S	0.000	24.134

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603673N / *Future Naval Capabilities Advanced Tech Dev*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Develop Low-Cost, Mass Producible, Hypersonic Long-Range Hypersonic strike weapon.		
Congressional Add: Warfigher Experience Lab ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop technology for Warfigher Experience Lab.	0.000	19.307
Congressional Add: Super Swarm ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop Super Swarm technology.	0.000	4.827
Congressional Adds Subtotals	7.723	67.575

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680N *I Manufacturing Technology Program*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	61.192	78.065	79.132	-	79.132	83.925	63.638	64.883	65.970	Continuing	Continuing
1050: *Manufacturing Tech*	0.000	61.192	63.903	79.132	-	79.132	83.925	63.638	64.883	65.970	Continuing	Continuing
9999: *Congressional Adds*	0.000	0.000	14.162	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.162

A. Mission Description and Budget Item Justification

The Office of Naval Research's (ONR) mission is to foster scientific research for the advancement of naval power. This work does not stop at the laboratory. Delivery of breakthrough capability often requires new technologies in manufacturing and supply chains of national security. The Manufacturing Technology (ManTech) Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development, optimization, and transition of enabling manufacturing technologies to key naval suppliers. In general, investments transition emerging Science and Technology (S&T) results to acquisition programs; improve industrial capabilities in production, maintenance, repair and industrial base responsiveness; and advance manufacturing technology to reduce cost, improve performance, and responsiveness. Currently, the ManTech Program is focused on affordability improvements for specific key acquisition platforms as defined in the Navy ManTech Investment Strategy. Key platforms currently targeted include: VIRGINIA Class Submarine (VCS)/COLUMBIA Class submarine (CLB); DDG 51 Class destroyer; CVN 78 Class carrier; FFG 62 Class frigate, and F-35 Lightning II aircraft. PEO IWS was added to the Investment Strategy as a number of their integrated warfare systems are critical to the NAVSEA acquisition platforms currently supported. Office of Naval Research (ONR) ManTech helps these Navy programs achieve their respective affordability goals by transitioning developed manufacturing technology which, when implemented, results in needed cost reduction or cost avoidance. In addition to addressing affordability for key naval platforms, ManTech also addresses manufacturing technology to aid in capability acceleration to the fleet.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Due to the number of efforts in this Program Element (PE), the programs described herein are representative of the work included in this PE.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603680N *I Manufacturing Technology Program*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	63.084	63.903	63.828	-	63.828
Current President's Budget	61.192	78.065	79.132	-	79.132
Total Adjustments	-1.892	14.162	15.304	-	15.304
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.508			
• Congressional Rescissions	-	-			
• Congressional Adds	-	14.670			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.292	0.000			
• SBIR/STTR Transfer	-0.600	0.000			
• Program Adjustments	0.000	0.000	15.304	-	15.304
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Continuous Real-Time SMM Capability and Capacity A*	0.000	6.439
Congressional Add: *Energetic Innovation Hub*	0.000	7.723
Congressional Add Subtotals for Project: 9999	0.000	14.162
Congressional Add Totals for all Projects	0.000	14.162

Change Summary Explanation

Funding: The FY 2027 request was increased due to realignment of funds in support of Golden Fleet.

Technical: No significant change.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603680N / *Manufacturing Technology Program*	Project (Number/Name) 1050 / *Manufacturing Tech*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1050: *Manufacturing Tech*	0.000	61.192	63.903	79.132	-	79.132	83.925	63.638	64.883	65.970	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Office of Naval Research's (ONR) mission is to foster scientific research for the advancement of naval power. This work does not stop at the laboratory. Delivery of breakthrough capability often requires new technologies in manufacturing and supply chains of national security. The Manufacturing Technology (ManTech) Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development, optimization, and transition of enabling manufacturing technologies to key naval suppliers. In general, investments transition emerging Science and Technology (S&T) results to acquisition programs; improve industrial capabilities in production, maintenance, repair and industrial base responsiveness; and advance manufacturing technology to reduce cost, improve performance, and responsiveness. Currently, the ManTech Program is focused on expanded throughput, affordability, and enhanced capability for specific key acquisition platforms as defined in the Navy ManTech Investment Strategy. Primary platforms currently targeted include: VIRGINIA Class Submarine (VCS)/COLUMBIA Class submarine (CLB); DDG 51 Class destroyer; CVN 78 Class carrier; F-35 Lightning II aircraft; and critical PEO IWS systems. Office of Naval Research The Office of Naval Research's (ONR) mission is to foster scientific research for the advancement of naval power. This work does not stop at the laboratory. Delivery of breakthrough capability often requires new technologies in manufacturing and supply chains of national security. The Manufacturing Technology (ManTech) Program is intended to improve the productivity and responsiveness of the U.S. defense industrial base by funding the development, optimization, and transition of enabling manufacturing technologies to key naval suppliers. In general, investments transition emerging Science and Technology (S&T) results to acquisition programs; improve industrial capabilities in production, maintenance, repair and industrial base responsiveness; and advance manufacturing technology to reduce cost, improve performance, and responsiveness. Currently, the ManTech Program is focused on expanded throughput, affordability, and enhanced capability for specific key acquisition platforms as defined in the Navy ManTech Investment Strategy. Primary platforms currently targeted include: VIRGINIA Class Submarine (VCS)/COLUMBIA Class submarine (CLB); DDG 51 Class destroyer; CVN 78 Class carrier; F-35 Lightning II aircraft; and critical PEO IWS systems. Office of Naval Research (ONR) ManTech helps these Navy programs achieve their respective goals by transitioning developed manufacturing technology which, when implemented, results in needed throughput, affordability, and/or capability enhancements.

Today's Sailors and Marines are enabled by Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of Naval Basic and Applied research, and Advanced Technology Development investments to ensure Naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research and outlined in the Naval R&D Framework.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Due to the number of efforts in this Program Element (PE), the programs described herein are representative of the work included in this PE.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Composites Processing and Fabrication	8.000	16.748	16.221	0.000	16.221
Articles:	-	-	-	-	-
Description: The primary technical goal of the Composites Processing and Fabrication activity is improving weapon systems throughput, affordability, and/or capability enhancements through the increased utilization of composite and other non-metallic materials and structures. This is being achieved through the development, maturation, and transition of affordable and robust manufacturing, assembly, and repair processes that fully exploit the benefits of composite and other non-metallic materials. Concentration is on: VIRGINIA Class submarine (VCS)/COLUMBIA Class submarine (CLB), DDG 51 Class destroyer, CVN 78 Class carrier, F-35 Lightning II aircraft, and PEO IWS systems. Composites processing and fabrication technology area includes the development of new and improved manufacturing processes for materials systems technology including but not limited to fiber-reinforced polymeric (organic) resin composites; ceramic-matrix, metal-matrix, and carbon-carbon composites; materials for radomes and other electrical applications; polymer additive materials; insulation materials; coatings; and adhesives. Manufacturing process areas include but are not limited to forming, machining, bonding and related technologies, additive manufacturing, and non-destructive inspection. Emphasis is placed on developing automated and robotic processes for the above. For FY27, the energetics manufacturing technology portfolio is moving from the Manufacturing Enterprise/Other activity to the Composites Processing and Fabrication activity. Focus is on energetics process development and optimization, modeling and simulation, engineering, production, test and evaluation, fleet/operations support. Energetic manufacturing priorities include identification of weapons system and manufacturing base need and development, demonstration, and transition of energetics manufacturing technologies. ***FY 2026 Plans:*** - Complete composites efforts in support of key platforms in technology areas including machining of carbon-carbon composites and in adhesive bonding.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to develop and transition composites manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, F-35, and PEO IWS systems. - Continue to develop and transition composites manufacturing technology improvements that accelerate capability to the fleet based on DoW Critical Technology areas. Areas of concentration include (1) unmanned/ autonomous vehicle production, (2) advanced submarine technology fabrication, (3) sustainment technology, (4) hypersonics production, and (5) other ONR manufacturing maturation efforts. This includes technology areas including fuel bladder technologies, polymer molding, insulation, non-destructive inspection of coatings, fiber composite processing, and bio-composites. - Initiate projects in support of key platforms in technology areas including hypersonic radomes, undersea coatings, thermoplastic materials, and rotor blades. ***FY 2027 Base Plans:*** - Continue to develop and transition composites manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, F-35, and PEO IWS systems. - Continue composites efforts in support of key platforms in technology areas including in support of key platforms in technology areas including hypersonic radomes, undersea coatings, thermoplastic materials, polymer molding, fiber composite processing, bio-composites, and rotor blades. - Complete composites efforts in technology areas such as fuel bladder technologies, non-destructive inspection of coatings, and insulation. - Initiate composites efforts in support of key platforms in technology areas such as composite and non-metallic materials processing and fabrication. - Initiate efforts in energetics manufacturing technology that result in expanded through-put, affordability, and enhanced capability. Technology areas include critical chemicals, additive manufacturing, and robotics and automation for munitions production and energetic materials fabrication. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change between FY2026 and FY2027.					
Title: Electronics Processing and Fabrication	11.952	16.075	16.197	0.000	16.197
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The primary technical goal of the Electronics Processing and Fabrication activity is improving electronic weapon systems affordability by developing and transitioning affordable, robust manufacturing processes and capabilities for electronics critical to defense applications over their full life-cycle. Efforts create new and improved electronics/electro-optics manufacturing processes for transition to the production floor. Emphasis is on VIRGINIA Class submarine (VCS)/COLUMBIA Class submarine (CLB), DDG 51 Class destroyer, CVN 78 Class carrier, F-35 Lightning II aircraft, and PEO IWS systems. Electronics processing and fabrication technology areas include, but are not limited to: compound semiconductors/wide bandgap semiconductors; low-cost, high-throughput manufacturing and assembly techniques; nanoelectronics; electronics packaging technologies (including tamper proof and non-hermetic approaches); optics manufacturing technology (materials devices, circuits, modules, subsystems); optical interconnects; fiber optics and photonics; technologies for electronics and electro-optics testing and evaluation; optical imaging for manufacturing operations; and High Energy Laser (HEL)/directed energy weapons. ***FY 2026 Plans:*** - Complete electronics / electro-optics projects in support of key platforms in technology areas such as focal plane array photonics, inspection technologies, advanced ceramics, electronic connectors, and sonar transformer manufacturing. - Continue to develop and transition electronics and electro-optics manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, F-35, and PEO IWS systems. - Continue electronics / electro-optics projects in support of key platforms in technology areas such as focal plane array photonics, undersea ceramics, and inspection technologies. - Initiate electronics / electro-optics projects in support of key platforms in technology areas such as inspection technologies, electronic assembly automation, and sensor manufacturing. ***FY 2027 Base Plans:*** - Complete electronics / electro-optics projects in support of key platforms in technology areas such as focal plane array photonics, inspection technologies, sensor manufacturing, and sonar transformer manufacturing. - Continue to develop and transition electronics and electro-optics manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability primarily for PEO IWS systems and additional key platforms: VCS/CLB, DDG 51, CVN 78, and F-35.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue electronics / electro-optics projects in support of key platforms in technology areas such as undersea ceramics. - Initiate electronics / electro-optics projects in support of key platforms in technology areas such as cryocooler manufacturing, acoustic sensors, assembly automation, wafer processing, and corrosion protection. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change between FY2026 and FY2027.					
Title: Metals Processing and Fabrication	11.486	11.909	11.526	0.000	11.526
Articles:	-	-	-	-	-
Description: The primary technical goal of the Metals Processing and Fabrication activity is to develop affordable, robust manufacturing and repair processes/capabilities for metals and special materials critical to Navy weapon system applications. Emphasis is on VIRGINIA Class submarine (VCS)/COLUMBIA Class submarine (CLB), DDG 51 Class destroyer, CVN 78 Class carrier, F-35 Lightning II aircraft, and PEO IWS systems. Metals processing and fabrication technology areas include but are not limited to processing methods; metals additive manufacturing; metallic materials-based systems; casting; joining techniques; machining; surface and heat treatments; coating/cladding; assembly; metal/non-metals interfaces issues; and inspection and compliance verification. Emphasis is placed on developing automated and robotic processes for the above. For FY27, the sustainment manufacturing / Repair Technology (RepTech) portfolio is moving from the Metals Processing and Fabrication activity to the Manufacturing Enterprise/Other activity. ***FY 2026 Plans:*** - Complete metals processing and fabrication projects in support of key platforms in areas such as inspection technologies, robotics and automation, advanced welding technologies, and joining processes. - Complete Repair Technology (RepTech) thrust to develop, optimize, and transition repair technologies for key naval platforms at depots and logistics centers. At the project level, initiate approximately 3 projects in sustainment technology once FY26 planning is complete.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to develop and transition metals processing and fabrication manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, F-35, and FFG 62. - Continue metals processing and fabrication projects in support of key platforms in areas such as surface preparation, shipboard structural design, machine learning, fabrication mobility/agility, process flow optimization, and metal forming. - Initiate metals processing and fabrication projects in support of key platforms in areas such as robotics and automation, advanced metallic materials, remote welding, and advanced welding techniques. ***FY 2027 Base Plans:*** - Complete metals processing and fabrication projects in support of key platforms in areas such as robotic and automation, inspection technologies, metal forming, process flow optimization, fabrication mobility/agility, surface preparation, and machine learning. - Continue to develop and transition metals processing and fabrication manufacturing technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, and F-35. - Initiate metals processing and fabrication projects in support of key platforms in areas such as robotics and automation, shipboard drilling, and advanced welding techniques. - Continue metals processing and fabrication projects in support of key platforms in areas such as robotics and automation, and inspection technologies. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change between FY2026 and FY2027.					
Title: Manufacturing Enterprise/Other	29.754	19.171	35.188	0.000	35.188
Articles:	-	-	-	-	-
Description: The Manufacturing Enterprise/Other activity includes: (1) efforts targeted towards improving, in general, the manufacturing enterprise for the production of key naval platforms (both shipbuilding and aircraft); (2) energetics efforts (through 2026); (3) naval research enterprise and laboratory support for key projects; and (4) technical program support. Manufacturing Enterprise addresses the development, optimization, and transition of manufacturing enterprise technology to key naval platform suppliers. Emphasis is on VIRGINIA					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Class submarine (VCS)/COLUMBIA Class submarine (CLB), DDG 51 Class destroyer, CVN 78 Class carrier, F-35 Lightning II aircraft, and PEO IWS systems. Manufacturing enterprise technology areas include, but are not limited to: design for easier production/design for manufacturability; development of build/assembly strategies; modeling and simulation technologies; model-based tools and approaches to optimize ease of production; intelligent manufacturing planning and factory execution; elimination of inefficiencies in design optimization, material usage, labor utilization, work flow, etc.; supply chain procedures and improvements (such as network centric manufacturing capabilities to facilitate resilient and adaptable supply chains); development of more efficient structural fabrication product lines; streamlining of outfitting operations; prediction and reduction of welding distortion; advanced automation and robotics for manufacturing; advanced data analytics, artificial intelligence and machine learning for production environments; and inspection technologies such as digital radiography and ultrasonic technologies. Energetics efforts concentrate on developing energetics solutions to ensure the availability of safe, affordable, and quality energetics products largely in support of Program Executive Office (PEO) Integrated Warfare Systems (IWS). For FY27, the energetics manufacturing technology portfolio is moving from the Manufacturing Enterprise/Other activity to the Composites Processing and Fabrication activity; additionally, the sustainment manufacturing / Repair Technology (RepTech) portfolio is moving from the Metals Processing and Fabrication activity to the Manufacturing Enterprise/Other activity. The sustainment manufacturing / Repair Technology (RepTech) focus is on materials processing, laser processing, advanced composites, manufacturing systems, repair and sustainment, and complex systems monitoring. The RepTech focus is on new and emerging technologies to improve the capabilities of Navy depots, shipyards, Marine Corps Logistics Bases, and lower-level maintenance activities throughout the fleet. This activity also includes the development, optimization, and transition of repair technology for the repair, overhaul, and sustainment of key Navy systems. ***FY 2026 Plans:*** - Complete energetic manufacturing technology projects in support of key platforms in areas such as supply chain optimization and advanced energetics manufacturing, post-processing, critical chemicals, additive manufacturing, process flow optimization, modeling and simulation, robotics and automation, and acoustic mixing, and advanced energetic manufacturing. - Complete advanced manufacturing enterprise technology projects in support of key platforms in areas such as coatings, directed energy, digital measurement, process flow optimization, surface preparation, and digital process optimization.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Continue to develop and transition advanced manufacturing enterprise technology improvements that result in expanded throughput, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, and F-35. - Continue advanced manufacturing enterprise technology projects in support of key platforms in areas such as inspection technologies, additive manufacturing, coatings, model-based engineering, process flow optimization, digital measurement, modeling and simulation, and digital process optimization. - Initiate advanced manufacturing enterprise technology projects in support of key platforms in areas such as inspection technologies, Industry 4.0, digital process optimization, additive manufacturing, modeling and simulation, and coatings.					
FY 2027 Base Plans: - Complete advanced manufacturing enterprise and sustainment technology projects in support of key platforms in areas such as additive manufacturing, coatings, digital measurement, process flow optimization, and digital process optimization. - Continue to develop and transition advanced manufacturing enterprise and sustainment technology improvements that result in expanded through-put, affordability, and enhanced capability for key platforms: VCS/CLB, DDG 51, CVN 78, F-35, and PEO IWS systems. - Continue advanced manufacturing enterprise and sustainment technology projects in support of key platforms in areas such as inspection technologies, additive manufacturing, coatings, model-based engineering, digital measurement, modeling and simulation, and digital process optimization. - Initiate Repair Technology (RepTech) thrust to develop, optimize, and transition repair and sustainment technologies for key naval platforms at depots and logistics centers. At the project level, initiate approximately 3 projects in sustainment technology once FY27 planning is complete. - Initiate advanced manufacturing enterprise and sustainment technology projects in support of key platforms in areas such as shipboard sensors, high pressure gas generation, inspection technologies, inspection technologies, shipboard drilling, digital process optimization, modeling and simulation, and coatings. -Initiate projects in support of Golden Fleet initiatives.					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603680N / *Manufacturing Technology Program*	**Project (Number/Name)** 1050 / *Manufacturing Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Budget increase of $16M to support Navy priorities regarding shipbuilding and industrial base improvements in support of Golden Fleet initiatives.					
Accomplishments/Planned Programs Subtotals	61.192	63.903	79.132	0.000	79.132

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

Efforts are focused on affordability improvements (both acquisition and life-cycle) for specific key acquisition platforms as defined in the Navy ManTech Investment Strategy. Currently, the majority of Navy ManTech efforts are focused on affordability improvements for: VIRGINIA Class submarine (VCS)/COLUMBIA Class submarine (CLB), DDG 51 Class destroyer, CVN 78 Class carrier, FFG 62 Class frigate, and F-35 Lightning II aircraft. A smaller portion of ManTech's budget (approximately 20%) is directed towards capability acceleration -- manufacturing acceleration of key technologies to enable transition of these technologies to the fleet more quickly.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603680N / *Manufacturing Technology Program*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	0.000	14.162	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.162
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Continuous Real-Time SMM Capability and Capacity A	0.000	6.439
FY 2025 Accomplishments: N/A		
FY 2026 Plans: Continuous Real-Time SMM Capability and Capacity Awareness for Resilient Supply Chains		
Congressional Add: Energetic Innovation Hub	0.000	7.723
FY 2025 Accomplishments: N/A		
FY 2026 Plans: Energetics Innovation Hub		
Congressional Adds Subtotals	0.000	14.162

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603729N *I Warfighter Protection Adv Tech*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	7.518	31.787	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	39.305
2914: *Warfighter Protection Adv Tech*	0.000	5.105	7.653	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.758
9999: *Congressional Adds*	0.000	2.413	24.134	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.547

Note

This PE supports the advanced development and demonstration of technologies to improve warfighter performance, safety and survivability. Naval investment in these areas is essential in order to improve the ability to enhance, maintain, and sustain Warfighter effectiveness.

A. Mission Description and Budget Item Justification

This PE supports the advanced development and demonstration of technologies to improve warfighter performance, safety and survivability. Naval investment in these areas is essential in order to improve the ability to enhance, maintain, and sustain Warfighter effectiveness.

Today's Sailors and Marines are enabled by Naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of Naval basic and applied research, and advanced technology development investments to ensure Naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research, coordinated across the Naval Research Enterprise (NRE), and outlined in the Naval R&D Framework.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels (TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603729N *I Warfighter Protection Adv Tech*

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	7.605	7.653	7.596	-	7.596
Current President's Budget	7.518	31.787	0.000	-	0.000
Total Adjustments	-0.087	24.134	-7.596	-	-7.596
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-0.866			
• Congressional Rescissions	-	-			
• Congressional Adds	-	25.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.086	0.000			
• Program Adjustments	0.000	0.000	-7.596	-	-7.596
• Rate/Misc Adjustments	-0.001	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Development of Domestically Produced Laser-Protect*	0.000	9.654
Congressional Add: *Bone Marrow Registry Program*	0.000	11.584
Congressional Add: *Development of Automated Resuscitation Catheter*	0.000	2.896
Congressional Add: *Thermite firefighting robotics*	2.413	0.000
Congressional Add Subtotals for Project: 9999	2.413	24.134
Congressional Add Totals for all Projects	2.413	24.134

Change Summary Explanation

Funding: The FY 2027 request was reduced by $7.596 million for divestment of program funding for technologies to improve warfighter performance, safety and survivability for higher departmental priorities.

Technical: Not applicable.

Schedule: Not applicable.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603729N / *Warfighter Protection Adv Tech*	Project (Number/Name) 2914 / *Warfighter Protection Adv Tech*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2914: *Warfighter Protection Adv Tech*	0.000	5.105	7.653	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	12.758
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Program Element supports the advanced development and demonstration of technologies to improve warfighter performance, safety and survivability. Naval investment in these areas is essential in order to improve the ability to enhance, maintain, and sustain Warfighter effectiveness.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval Noise-Induced Hearing Loss (NIHL) and Warfighter Performance	5.105	7.653	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Improve technologies aimed at enhancing warfighter effectiveness and efficiency, including efforts in: biocentric technologies, medical concepts, intelligent and autonomous systems, decision sciences, information warfare and future conflict, manpower, personnel, training, and education, human performance. These efforts will mature technologies in order to better ensure transition into acquisition and procurement programs.					
FY 2026 Plans: Warfighter Performance and Protection - Complete advanced technology development and assessment of materials and protective gear to reduce exposures of Warfighters to directed energy systems. - Complete advanced technology development efforts in areas including: expeditionary medicine, diver performance, and information warfare. - Complete development of data visualizations that illustrate the submarine crew's decision-making processes for use in simulation training debriefs and trend analysis. - Complete development of prototype tools to capture key decisions and significant events during submarine simulation training. - Complete advanced development of countermeasures against extreme environmental exposures (i.e., extreme heat, cold, smoke) to enhance warfighter survivability in operational or emergency scenarios. - Initiate and complete development of AI-enabled Command, Control, and Communications (C3) for autonomous planning, distribution, reaction and recovery of unmanned assets.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603729N / *Warfighter Protection Adv Tech*	**Project (Number/Name)** 2914 / *Warfighter Protection Adv Tech*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Initiate and complete the development of a dive suit with enhanced flexibility, modularity, fit and reduced weight to protect the diver against harmful deep-sea pressure. - Initiate and complete development of Live, Virtual, and Constructive capabilities for the Carrier Strike Group to organically conduct mission rehearsal while at sea on deployment. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** The decrease in funding from FY 2026 to FY 2027 is due to the realignment of funding from the Warfighter Protection Advanced Technology Portfolio to other Navy priorities.					
Accomplishments/Planned Programs Subtotals	5.105	7.653	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603729N / *Warfighter Protection Adv Tech*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	2.413	24.134	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	26.547
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Development of Domestically Produced Laser-Protect ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Develop domestically produced laser-protective eyewear and optical systems.	0.000	9.654
Congressional Add: Bone Marrow Registry Program ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Continue development of the scientific, medical and technological advances required to support military contingencies caused by injury to the blood-forming system from toxic substances. Primary aim is to provide high quality HLA matched progenitor cells or platelets from healthy donors for DoW casualties as part of a contingency response.	0.000	11.584
Congressional Add: Development of Automated Resuscitation Catheter ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Continue development of Automated Resuscitation Catheter (ARCA). This system includes two donut-shaped balloons connected by a collapsible retrievable shunt. The shunt is a braided stent-graft and includes an internal balloon. ARCA also contains two pressure sensors and a control module to selectively operate the balloons.	0.000	2.896
Congressional Add: Thermite firefighting robotics ***FY 2025 Accomplishments:*** - Enhance Naval shore-based firefighting mission readiness, capability and safety. - Thermite firefighting robots of two different sizes will be obtained and delivered to Navy Installations to determine the feasibility and correct size units for Navy Ports, Airfield and Munition sites to assist with unmanned firefighting streams.	2.413	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603729N / *Warfighter Protection Adv Tech*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
- Assess ability to maneuver on different classes of Navy ships. ***FY 2026 Plans:*** N/A		
Congressional Adds Subtotals	2.413	24.134

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy											Date: April 2026	
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603758N *I Navy Warfighting Exp & Demo*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	133.296	149.980	66.395	-	66.395	68.992	69.975	71.351	72.567	Continuing	Continuing
1097: *NavalX (Naval Accelerator)*	0.000	27.088	17.932	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	45.020
2918: *Navy Warfighting Experiments and Demo*	0.000	65.385	63.991	27.729	-	27.729	27.614	27.774	28.259	28.737	Continuing	Continuing
2950: *Experiments and Demonstration Transition*	0.000	0.000	0.000	38.666	-	38.666	41.378	42.201	43.092	43.830	Continuing	Continuing
9999: *Congressional Adds*	0.000	40.823	68.057	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	108.880

Note

Investments in Project 2918; Navy Warfighting Experiments and Demo on Naval Warfare Experimentation, Operations Analysis, TechSolutions, and Technology Bridges have been transferred in FY 2027 to Project 2950; Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) guides ongoing research and innovation operations in the pursuit of novel and decisive capabilities for our Sailors and Marines. ONR manages a broad, but priority-driven investment portfolio of near to long-term basic and applied research. This Program Element (PE) develops Science and Technology (S&T) breakthroughs to meet current operational needs, from prototyping solutions for warfighters, to Fleet experimentation and operational demonstrations including Fleet Battle Problems (FBP), Limited Objective Experiments (LOEs) and Fleet/Force exercises. The key aspects of this PE are divided into six areas supporting the continuum of S&T and innovation operations from discovery to delivery: (1) Naval Warfare Prototype and Demonstration develops rapid prototypes and through innovation operations, provides them to the warfighter for experimentation during operational demonstrations and exercises; (2) Operations Analysis provides the Navy and Marine Corps the means to identify capability needs that can be addressed with science and technology solutions and inform future investment; (3) NavalX applies innovation operations to develop, demonstrate, and transition newly invented or recently discovered technologies that address emergent and enduring operational problems in an accelerated timeframe; (4) Tech Solutions to include Tech Bridge industry scanning allows the ability to rapidly prototype science and technology solutions that address Fleet/Force needs submitted by Sailors and Marines within the development environment and at the deck plate level; (5) support for the Naval Precision Strike Operations, providing the Navy capability to quickly locate, target, and strike critical targets; and (6) Undersea Systems Payloads and Weapons, addressing innovative affordable, persistent, and stealthy undersea system.

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher

guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research, coordinated across the Naval Research Enterprise (NRE), and outlined in the Naval R&D Framework.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	139.915	81.923	111.361	-	111.361
Current President's Budget	133.296	149.980	66.395	-	66.395
Total Adjustments	-6.619	68.057	-44.966	-	-44.966
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-2.443			
• Congressional Rescissions	-	-			
• Congressional Adds	-	70.500			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.367	0.000			
• SBIR/STTR Transfer	-4.252	0.000			
• Program Adjustments	0.000	0.000	-44.966	-	-44.966
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *Passive SONAR sensor AI testbed*	16.411	16.410
Congressional Add: *NavalX Regional T&E Accelerator*	5.116	0.000
Congressional Add: *AUKUS Pillar II Navy Initiatives*	19.296	0.000
Congressional Add: *NavalX Inland Empire Tech Bridge*	0.000	14.480
Congressional Add: *NavalX Technology Innovation Acceleration*	0.000	5.889
Congressional Add: *Warfighter Generative AI Mixed Reality Immersive S*	0.000	5.696
Congressional Add: *Rapid AI Deployment System for Combat Medicine*	0.000	6.757

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603758N *I Navy Warfighting Exp & Demo*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Congressional Add: *C-UAS Test Range*	0.000	3.861
Congressional Add: *Low-Cost Unmanned Surface Vessel*	0.000	3.379
Congressional Add: *USMC Warfighting Lab Unmanned/Counter-Unmanned Sys*	0.000	9.654
Congressional Add: *Naval Test Range for Autonomous Systems Feasibilit*	0.000	1.931
Congressional Add Subtotals for Project: 9999	40.823	68.057
Congressional Add Totals for all Projects	40.823	68.057

Change Summary Explanation

Funding changes: Reduction of $44.966M is attributed to the realignment of MTMD funds from this PE to 0605853N PU 3312 MTMD-Maritime Theater Missile Defense Forum for proper oversight and execution of the program. In addition, funding reductions are attributed to NavalX being dissolved and absorbed into the Naval Rapid Capabilities Office (NRCO). Reduction also due to the rebaselining of DoW S&T funding.

Technical changes: PU 1097: 18 NavalX Tech Bridges will no longer be resourced.

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603758N / *Navy Warfighting Exp & D emo*	Project (Number/Name) 1097 / *NavalX (Naval Accelerator)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1097: *NavalX (Naval Accelerator)*	0.000	27.088	17.932	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	45.020
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

In FY25, the Department of Navy (DON) consolidated and established the NavalX (Naval Acceleration) PU 1097 under PE 0603758N with six distinct activities (1) Naval Warfare Prototype and Demonstration to develop and deliver rapid prototypes to warfighters; (2) Technology Analysis, Development, and Investments to analyze technologies to address capability gaps from commercial marketplaces, including investment capital to kickstart and mature the technology in preparation for (1) above; (3) Innovation Agility to address enabling technologies to speed up integration and transition of capability enhancing technology and overcome technical debt; (4) Tech Bridges to cultivate local business ecosystems in order to discover and accelerate non-traditional companies with commercial technologies that can be rapidly adopted by the warfighter; (5) Innovation Operations to support mission-driven problem solving across the DON and academia in support of culture, organizational, and business changes to enable agile and rapid prototyping, development, and transition processes, and (6) Innovation Protection Policy (IPP) to provide research to inform policy on technology trends to enable U.S. dominance in the future technological marketplace.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval Warfare Prototype and Demonstration (NavalX)	2.485	2.400	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The objective of this activity is to capitalize technology breakthroughs of Government and Industry to develop and integrate components, including subsystems, into prototypes quickly, mature into products, and provide to the warfighter for demonstration, test, analysis, Fleet/Force exercises, and/or tests in simulated or actual environments. NavalX, partnering with Fleet/Force warfighting commands for demonstrations, iterates throughout the innovation process to achieve optimal warfighter results. The net results are early warfighter feedback, assessment of CONOPS, analysis of mission impact, and an understanding of DOTMLPF considerations to mature and transition technology solutions. NavalX participates in live exercises and demonstration events such as Integrated Battle Problem, Silent Swarm, Trident Spectre, Hybrid Fleet, and others to analyze and assess industry technology candidates. NavalX also leverages these events as demonstration and test opportunities for technology prototypes to assess their overall mission effectiveness and receive warfighter feedback on human factors, safety, usability, and interoperability, and other critical success metrics.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: - Complete the management of a technology prototype demonstration, test, and analysis plan that will guide multi-year technology development efforts in response to emerging concepts and doctrine. - Complete exercises and operational environment tests as an excursion to traditional programs to address additional warfighter needs and/or mitigate capability delivery risk. - Complete to maintain and leverage innovation test and analysis opportunities to guide prioritized concept investigations and iterations in support of Fleet/Force needs and strategic technology development initiatives. - Complete to develop and manage AI technologies for the NRE AI ecosystem. - Complete to develop Fleet engagement plans for technology assessments, including Integrated Battle Problem 26, Trident Spectre 26, UNITAS, COMPACFLT PACIFIC DRAGON, Valiant Shield 26, and others. - Complete tech scans, tech assessments, and follow-up technology transition engagements, leveraging commercialization initiatives with industry and academia partners. - Continue to participate in large scale service-level exercises to incubate and mature prototype technologies and capabilities with Fleet and Force input to establish concept potential and to inform NRE transition and investment decisions. - Initiate the Capability Readiness process and complete technology readiness, acquisition readiness, manufacturing readiness, and transition readiness assessments for each technology candidate under evaluation at the experimentation events.					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
FY 2026 to FY 2027 Increase/Decrease Statement:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Title: Technology Analysis, Development, and Investments (NavalX) ***Articles:***	2.635 -	3.378 -	0.000 -	0.000 -	0.000 -
Description: This project includes the technology transition initiatives which solve mission focused, human centered challenges using innovation and design thinking methods. Technology initiatives tailor the analysis, development, and solution generation methods to the respective topic and scope. ***FY 2026 Plans:*** - Complete - Identify, prioritize, and analyze technologies to solve mission focused, human-centered challenges using innovation and systems engineering methods for the Navy and United States Marine Corps (USMC) by providing analysis, facilitating development, and managing the transition of new technologies through the innovation operations cycle. - Complete the Technology Analysis process using capability readiness assessments, business and acquisition readiness, and the mission benefit and warfighter utility assessments to prioritize and select commercial and dual-use technology for incubation and rapid transition. - Complete the analysis to support 10 technology scans, driven by validated Fleet/Force problem statements traceable to IPLs or other urgent needs statements, leveraging the NavalX Salesforce System (NXSS) database of technology leads and potential solutions. Provide the analysis to support 1 prize challenge executed across the ecosystem by the Tech Bridges. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Title: Innovation Agility (NavalX) ***Articles:***	4.042 -	3.100 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: The Innovation Agility portfolio responds to opportunities for rapid and disruptive technologies to meet urgent warfighter needs, and addresses technology and sailor performance issues identified during exercises and demonstrations. NavalX Agility explores high-risk, disruptive, and innovative technologies and concepts that advance naval warfighter's capabilities. The program has substantial programmatic flexibility and is not limited to any set of technology areas. Ultimately, the goal is to provide a dramatic improvement for the warfighter at a rapid pace. Some of these technologies may become part of a follow-on technology development, may end up in the hands of the warfighter for Fleet/Force experimentation, or may culminate in a significant Fleet/Force exercise that demonstrates capability that transitions into the Acquisition Program of Record (POR). NavalX builds an agile, collaborative, and connected Naval network to pursue high risk, disruptive, and innovative technologies and concepts that advance naval warfighter's capabilities. Innovation Agility includes the digital environments needed to develop technologies rapidly and efficiently. Innovation Agility digital environments include Automated Test and Re-Test (ATRT) functionality to develop, demonstrate, and evaluate small business technologies and disruptive capabilities, evaluate cybersecurity, and provide a low barrier of entry for small businesses and new startups to integrate with Naval systems and missions. These digital environments provide for Model-Based Systems Engineering to do evaluation of technologies in the context of Naval missions and priority kill chains and support integration and interoperability with Naval systems unable to be tested/integrated traditionally at physical test sites. Innovation Agility encompasses efforts that transform the Navy's innovation culture. Innovation Agility focuses on training and scaling of non-traditional innovation methods with programs like the Center for Adaptive Warfighting (CAW), Workforce Agility (WFA) courses. ***FY 2026 Plans:*** - Complete to support and manage Innovation Agility projects, ensuring alignment with National Defense Strategy, OSW Modernization Priorities and CNO / CMC Guidance. Continue to lead the application of the NavalX Innovation to accelerate the discovery, development of new technologies and capabilities for naval warfighters.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete to support discovery of trends, sharing lessons learned, and empowering the workforce to solve problems and build their agility skills by providing high-quality, low-friction training and support to equip commands with warfighter-centered fundamentals. NavalX will leverage its agility workforce initiatives to create and shape the innovation workforce of the DON, focused on the product development marketplace that transitions and incubates technologies to scale. Innovation in the military marketplace requires training and an agility and innovative mindset fostered by NavalX Innovation Agility. - Complete innovation workforce training and culture efforts including CAW and WFA to foster a culture and educated workforce that encourages innovation, problem solving, and achievement using industry best-practices. - Complete to develop and deliver incremental builds of the Business of Innovation R&D digital environment including integration of Automated Test and Re-Test (ATRT), Model-Based Systems Engineering, Customer Resource Management, Cybersecurity, Force-Level Integration and assessment, Collaboration boards, Agile/ Sprint tools, Software CM tools, and other virtual- and cloud-based tools to lower the barrier of entry for new small businesses and startups. Digital environment will directly map to the Innovation Operations pipeline and support the transition and development of new technology solutions. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Title: Tech Bridges (NavalX) ***Articles:*** ***Description:*** NavalX builds an agile, collaborative, and connected Naval business network via regional Technology Bridges (Tech Bridges) to cultivate the startup and development of new small businesses and industry thinking that can drive high-risk, disruptive, and innovative technologies and concepts that advance naval warfighter's capabilities. Tech Bridges are focused on developing and cultivating local and state business ecosystems that support regional jobs, businesses, startups, and investment opportunities related to Naval technology development. Tech Bridges align with Defense Innovation Unit (DIU), National Security Innovation	9.775 -	6.758 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Network (NSIN), AFWERX (a Technology Directorate of the Air Force Research Laboratory (AFRL) for accelerated technology development), and other DoW mission accelerator centers and provide a critical Naval integration point for supporting innovation across the services and across accelerator offices. Tech Bridge ecosystem development helps to foster innovation and startup opportunities across local, regionals, and state business sectors and helps to develop partnerships with local business development organizations and investments. Tech Bridges align with and leverage all of the execution authority of the T2 program and helps to ensure partnerships across PIAs, Labs, Warfare Centers, and other DoW organizations. Tech Bridges support regional technology innovation challenges addressing critical Naval mission problems; increase participation of small- and medium-sized business in the defense industrial base; produce and deliver dual-use prototypes in partnership with the local/regional commercial sector, and support regional operational experimentation events. Tech Bridges are an ASN(RDA) initiative under NavalX and sponsored by ONR. Currently, sixteen Tech Bridges have been established across the U.S. plus one in London and Japan with the mission to promote regional/local collaborations in support of DON and national security missions. While each Tech Bridge may focus on their specific local/regional challenges and opportunities, they all work together as a national Tech Bridge network to share best practices and support the Navy and USMC's mission. ***FY 2026 Plans:*** - Complete to support local/regional economic development to grow the defense industrial base. - Complete to support regional technology innovation challenges addressing critical Naval mission problems; increase participation of small- and medium-sized business in the defense industrial base, including nontraditional businesses and new startups; produce and deliver dual-use prototypes in partnership with the local/regional commercial sector, and support regional operational experimentation events. - Complete to foster regional support and participation in NavalX innovation and experimentation initiatives in FY26, such as PACFLT's Integrated Battle Problem 26 or Trident Spectre 26 by performing tech scans, industry outreach, conducting "Industry Day" style meetings and conferences, and completing prize challenges. - Complete to support technology transition of local ecosystem businesses into Navy acquisition programs of record through the Innovation Operations pipeline by shepherding local/regional small business, start-ups,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
and non-traditional businesses through various stages of the business of innovation cycle and the acquisition process. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Title: Innovation Operations (NavalX) ***Articles:*** ***Description:*** The Naval Research Enterprise (NRE), through NavalX, supports mission-driven design and problem solving within the Naval Research and Development Establishment (NR&DE) and academia in support of agile and rapid prototyping development driven by well-defined and effective innovation processes, operations, and a trained workforce. This will bring commercial best practices for innovation processes into the DON to stimulate effective NR&DE and industry-wide collaborations and facilitation to accelerate the delivery of novel technologies to the warfighter. Activities are based on three foundational principles: (1) utilize innovative technical and business pathways that accelerate technology acquisition and deployment to the warfighter and pilot potential efforts as a result of this investigation; (2) leverage the commercial market and attract private investments to modernize, accelerate, and reduce the cost of defense acquisition and deployment of technologies that provide capabilities to the warfighter; and (3) employ innovative commercial industry best practices in contracting that accelerate awards and provide flexibility and speed in technology development and transition. ***FY 2026 Plans:*** - Complete and expand development of innovative prototypes at Warfare Centers, Naval Laboratories, NavalX Tech Bridges, and related DON organizations solving key warfighter problems that are identified through the innovation process. - Complete and expand efforts to emphasize the implementation of a common innovation process and language to accelerate the delivery of capabilities to the warfighter.	7.651 -	1.800 -	0.000 -	0.000 -	0.000 -

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete to lead Fleet/Force Engagement initiatives with warfighters and S&T leads across all the TYCOMS and numbered Fleets to understand, identify, source, and curate problem statements for critical warfighting gaps. Work within the innovation process and the Tech Bridges to help identify potential technology solutions to the curated problem statements and act as the Fleet interface throughout technology discovery, incubation, and fielding. - Complete - Conduct Industry Day Challenges that solicit and expand the DON industrial base, especially small businesses and startups, to solve warfighter problems. The Challenges will employ the NavalX Tech Bridge network to reach the widest possible industrial base and to promote collaborations across the NRE. - Complete to Expand Naval sustainment efforts across Warfare Centers through cross-community challenges and Small Business Innovative Research (SBIR) topics. - Complete - Conduct collaborative activities across the Defense Innovation Community of Entities (DICE) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Title: Innovation Protection Policy (NavalX)	0.500	0.496	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The Navy's Innovation Protection Policy (IPP) office performs research, analysis, and policy development for protection of intellectual property as it pertains to patents of critical and national security technologies. This effort was assigned to DoN (NavalX) by OSW and is a cross agency (Commerce, Homeland Security, US Patent Office) combined effort to provide vulnerability assessments and policy recommendations for protecting, strengthening and building resilience in the U.S Patent process from nation state actors attempting to disrupt innovation IP confidence and integrity with the goal of shifting international patent filings, and subsequently business, away from the U.S., thus reducing U.S. influence and power as a global innovation marketplace tied to the rule of law.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 1097 / *NavalX (Naval Accelerator)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: - Complete IPP research, analysis, and policy development for protection of intellectual property contained in patents for critical and national security technologies. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Decrease from FY 2026 to FY 2027 due to reprioritization of Naval S&T resources.					
Accomplishments/Planned Programs Subtotals	27.088	17.932	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603758N / *Navy Warfighting Exp & D emo*	Project (Number/Name) 2918 / *Navy Warfighting Experiments and Demo*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2918: *Navy Warfighting Experiments and Demo*	0.000	65.385	63.991	27.729	-	27.729	27.614	27.774	28.259	28.737	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Investments in Project 2918 on Naval Warfare Experimentation, Operations Analysis, TechSolutions, and Technology Bridges have been transferred in FY 2027 to Project 2950 Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request.

A. Mission Description and Budget Item Justification

This project focuses on the application of recent technology breakthroughs to meet current operational needs from a subscale proof-of-principle into a full-scale prototypes for warfighter experimentation during laboratory and operational demonstrations, Fleet Battle Problems (FBPs), Limited Objective Experiments (LOEs) and Fleet/Force exercises.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval Warfare Experimentation	32.465	20.583	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Investments in Project 2918 on Naval Warfare Experimentation have been transferred in FY 2027 to Project 2950 Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request.					
FY 2026 Plans: - Complete the NRE experimentation plan in alignment with the 30 Year S&T Strategy to guide multiyear S&T investment in response to emerging concepts and doctrine. - Complete operational experimentation of technologies and document results to inform early S&T product development, ensure operational relevancy and fit, accelerate technology maturation, and address additional warfighter needs while working to mitigate capability delivery risk. - Complete technology operational experimentation events (TOEE) that will address operational problems identified by Fleet/Force inputs.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2918 / *Navy Warfighting Experiments and Demo*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete to execute three TOEEs aligned to stakeholder needs across the requirements, science and technology, and operational communities. These investments consist of focused experiments such as limited technology assessments, limited objective experiments, and advanced capability experiments to provide decision quality information to inform future S&T investments to include further development goals, transition to acquisition or rapid fielding programs, or divestment. - Complete to participate in large scale service-level experimentation and international experimentation to assess early Technology Readiness Level concept investigations with Fleet/Force input. The outcomes will inform NRE, and where applicable Allies and International Partner, investment decisions as well as enabling the accelerated transition of S&T to the Fleet/Force. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: Operations Analysis	6.605	7.144	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Investments in Project 2918 on Operations Analysis have been transferred in FY 2027 to Project 2950 Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. ***FY 2026 Plans:*** - Complete to use operational analysis tools and techniques such as warfighter workshops to include Technology Innovation Games (TIGs) and modeling and simulation studies to assess the military utility of emerging technologies to build an analytical underpinning to support investment decisions. - Complete analysis of operational experimentation to identify S&T technical performance objectives that provide relevant operational capabilities to drive experimentation design and support investment decisions. This will					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2918 / *Navy Warfighting Experiments and Demo*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
include modeling and simulation and other analytical tools to quantify the operational relevance and military utility of technology performance parameters. - Complete to co-create actionable concepts with the workforce and warfighters that will impact near-term and long-term needs and inform requirements to include our International Allies by continuing the work with the Royal Canadian Navy and exploring a project in the AUKUS agreement. - Complete investments with other organizations developing in the extended reality (XR) space to determine the opportunities for sharing lessons learned and leveraging available assets and resources to inform design requirements. This shared investment will go towards infrastructure to develop concepts and discover trends that will impact the broader DoN TANG portfolio. (NAVSEA) ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: TechSolutions	9.998	11.125	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Investments in Project 2918 on TechSolutions have been transferred in FY 2027 to Project 2950 Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. ***FY 2026 Plans:*** - Complete to deliver new Science and Technology (S&T) prototypes to solve problems expressed directly by warfighters during Fleet/Force interactions. TechSolutions will develop, demonstrate, and deliver prototypes throughout the year as warfighter requests are received. It is estimated that in FY 2026 TechSolutions will be able to develop around 10 new prototype solutions to address warfighter needs.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2918 / *Navy Warfighting Experiments and Demo*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Complete developments that are initiated to deliver rapid response solutions so warfighters can achieve mission success and perform their duties more effectively and more efficiently by leveraging technological advancements. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: Precision Strike Technology	11.224	13.377	13.229	0.000	13.229
Articles:	-	-	-	-	-
FY 2026 Plans: - Continue and increase efforts in the area supporting Naval Precision Strike Operations, providing the Navy capability to quickly locate, target, and strike critical targets. Ongoing efforts include conducting kill-chain studies to identify and recommend engineering trades to enable weapon system interoperability and data fusion alternatives. These studies assess engineering feasibility of various kill-chain options and test and assess advanced weapon system capabilities. ***FY 2027 Base Plans:*** - Continue efforts in the area supporting Naval Precision Strike Operations, providing the Navy capability to quickly locate, target, and strike critical targets. Ongoing efforts include conducting kill-chain studies to identify and recommend engineering trades to enable weapon system interoperability and data fusion alternatives. These studies assess engineering feasibility of various kill-chain options and test and assess advanced weapon system capabilities. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** There is no significant funding change from FY 2026 to FY 2027.					
Title: Advanced Technology Development	5.093	10.762	14.500	0.000	14.500

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2918 / *Navy Warfighting Experiments and Demo*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Articles:	-	-	-	-	-
Description: Plans to conduct development of subsystems and components as well as efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated or real environment. The result should be proof of technological feasibility and assessment of subsystem and component operability and producibility. ***FY 2026 Plans:*** - Continue projects that demonstrate significant, system engineering, and hardware development to advance technology into a form suitable for demonstration. The goal will be to conduct a multi-year S&T effort to respond to emerging concepts and doctrine. Efforts will include demonstration of semi-automated thermal nonskid application to increase efficiency in application to ships as well as mine countermeasures using autonomous underwater vehicles. New efforts will include development of a fully integrated system to enable effective, multi-km High Energy Laser target engagement by sensing and correcting for optical distortions produced by turbulence. ***FY 2027 Base Plans:*** - Continue projects that demonstrate significant, system engineering, and hardware development to advance technology into a form suitable for demonstration. The goal will be to conduct a multi-year S&T effort to respond to emerging concepts and doctrine. Efforts that will be concluding include a demonstration of semi-automated thermal nonskid application to increase efficiency in application to ships as well as mine countermeasures using autonomous underwater vehicles. Efforts ongoing include the development of a fully integrated system to enable effective, multi-km High Energy Laser target engagement by sensing and correcting for optical distortions produced by turbulence. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Increase to funding from FY 2026 to FY 2027 is due to increased demonstrations of advance technology at the Naval Research Laboratory in support of High Energy Laser sensing into a fully integrated system for correction of optical distortions from turbulence.					
Title: Technology Bridges	0.000	1.000	0.000	0.000	0.000
Articles:	-	-	-	-	-

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2918 / *Navy Warfighting Experiments and Demo*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Description: Investments in Project 2918 on Technology Bridges have been transferred in FY 2027 to Project 2950 Experiments and Demonstration Transition under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. ***FY 2026 Plans:*** Complete: - Support regional technology innovation challenges addressing critical Naval mission problems; produce and deliver dual-use prototypes in partnership with the local/regional commercial sector; and support regional operational experimentation events. - Conduct technology market scanning, industry outreach, and the support of technology transition to address critical Naval mission problems. It will leverage US and UK funding to deliver dual-use prototypes and demonstrations in partnership with US Fleet Stakeholders. - Expand and scale efforts to help interested US companies find partners, suppliers, and markets overseas. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Accomplishments/Planned Programs Subtotals	65.385	63.991	27.729	0.000	27.729

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603758N / *Navy Warfighting Exp & D emo*	Project (Number/Name) 2950 / *Experiments and Demonstration Transition*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2950: *Experiments and Demonstration Transition*	0.000	0.000	0.000	38.666	-	38.666	41.378	42.201	43.092	43.830	Continuing	Continuing
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Investments in Project 2950 on Naval Warfare Experimentation, Operations Analysis, TechSolutions, and Technology Bridges have been transferred in FY 2027 from Project 2918 Navy Warfighting Experiments and Demo under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. This is not a new start.

A. Mission Description and Budget Item Justification

This project focuses on the application of recent technology breakthroughs to meet current operational needs from a subscale proof-of-principle into a full-scale prototypes for warfighter experimentation during laboratory and operational demonstrations, Fleet Battle Problems (FBPs), Limited Objective Experiments (LOEs) and Fleet/Force exercises.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Naval Warfare Experimentation	0.000	0.000	22.523	0.000	22.523
Articles:	-	-	-	-	-
Description: Investments in Project 2950 on Naval Warfare Experimentation have been transferred in FY 2027 from Project 2918 Navy Warfighting Experiments and Demo under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. This is not a new start.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: Initiate: - ONR experimentation plan in alignment with the 30 Year S&T Strategy to guide multiyear S&T investment in response to emerging concepts and doctrine. - Operational experimentation to determine best of breed technologies from industry and government labs and document results to inform early S&T product development,					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2950 / *Experiments and Demonstration Transition*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
ensure operational relevancy and fit, accelerate technology maturation, and address additional warfighter needs while working to mitigate capability delivery risk. - Technology operational experimentation events (TOEE) that will address operational problems identified by Fleet/Force inputs. - Execute three TOEEs aligned to stakeholder needs across the requirements, science and technology, and operational communities. These investments consist of focused experiments such as limited technology assessments, limited objective experiments, and advanced capability experiments to provide objective quality evidence and actionable insights to catalyze capability development and inform future S&T investment, divestment, or transition. - Participate in large scale service-level experimentation and international experimentation to assess early Technology Readiness Level concept investigations with Fleet/Force input. The outcomes will inform NRE, and where applicable Allies and International Partner, investment decisions as well as enabling the accelerated transition of S&T to the Fleet/Force. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: Operations Analysis	0.000	0.000	4.063	0.000	4.063
Articles:	-	-	-	-	-
Description: Investments in Project 2950 on Operations Analysis have been transferred in FY 2027 from Project 2918 Navy Warfighting Experiments and Demo under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. This is not a new start.					
FY 2026 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2950 / *Experiments and Demonstration Transition*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** Initiate: - Operational analysis tools and techniques such as warfighter workshops to include Technology Innovation Games (TIGs) and modeling and simulation studies to assess the military utility of emerging technologies to build an analytical underpinning to support investment decisions. - Analysis of operational experimentation to identify S&T technical performance objectives that provide relevant operational capabilities to drive experimentation design and support investment decisions. This will include modeling and simulation and other analytical tools to quantify the operational relevance and military utility of technology performance parameters. - Co-create actionable concepts with the workforce and warfighters that will impact near-term and long-term needs and inform requirements to include our International Allies by continuing the work with the Royal Canadian Navy and exploring a project in the AUKUS agreement. - Investments with other organizations developing in the extended reality (XR) space to determine the opportunities for sharing lessons learned and leveraging available assets and resources to inform design requirements. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: TechSolutions	0.000	0.000	11.060	0.000	11.060
Articles:	-	-	-	-	-
Description: Investments in Project 2950 on TechSolutions have been transferred in FY 2027 from Project 2918 Navy Warfighting Experiments and Demo under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. This is not a new start.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2950 / *Experiments and Demonstration Transition*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
FY 2026 Plans: N/A ***FY 2027 Base Plans:*** Initiate: - Deliver new Science and Technology (S&T) prototypes to solve problems expressed directly by warfighters during Fleet/Force interactions. TechSolutions will develop, demonstrate, and deliver prototypes throughout the year as warfighter requests are received. It is estimated that in FY 2027 TechSolutions will be able to develop around 10 new prototype solutions to address warfighter needs. - Developments that are initiated to deliver rapid response solutions so warfighters can achieve mission success and perform their duties more effectively and more efficiently by leveraging technological advancements. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Title: Technology Bridges	0.000	0.000	1.020	0.000	1.020
Articles:	-	-	-	-	-
Description: Investments in Project 2950 on Technology Bridges have been transferred in FY 2027 from Project 2918 Navy Warfighting Experiments and Demo under this same Program Element (PE) 0603758N. This new project was created to promote greater transparency in the Department of the Navy's annual budget request. This is not a new start. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** Initiate: - Support regional technology innovation challenges addressing critical Naval mission problems; produce and deliver dual-use prototypes in partnership with the local/regional commercial sector; and support regional operational experimentation events.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 2950 / *Experiments and Demonstration Transition*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
- Conduct technology market scanning, industry outreach, and the support of technology transition to address critical Naval mission problems. It will leverage US and UK funding to deliver dual-use prototypes and demonstrations in partnership with US Fleet Stakeholders. - Expand and scale efforts to help interested US companies find partners, suppliers, and markets overseas. ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding increase from FY 2026 to FY 2027 is due to funding realignment from Proj 2918 to Proj 2950 within the same Program Element.					
Accomplishments/Planned Programs Subtotals	0.000	0.000	38.666	0.000	38.666

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603758N / *Navy Warfighting Exp & D emo*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	40.823	68.057	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	108.880
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional Interest Items not included in other Projects.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: Passive SONAR sensor AI testbed	16.411	16.410
FY 2025 Accomplishments: Develop artificial intelligence (AI) / Machine Learning (ML) algorithms for classification of naval acoustic signatures using software tools and acoustic buoys. Automate the current manual acoustic classification processes, which are manpower intensive and slow, into an automated process that reduces errors in classifying passive acoustic signal energy from operational environments. Develop data labeling solutions that enable labeling for machine learning across multiple sensor types. Develop prototype software tools to do the timely, accurate, and precise labeling of passive acoustic energy, with the goal of early warning and detection, tracking, and classification of adversarial manned and unmanned surface and subsurface maritime acoustic signatures. Deploy prototype tools to commercial air, surface, and subsurface test ranges for test and evaluation and to provide simulation data similar to the U.S. Navy operational environments. Develop, integrate, and deliver a prototype portable modular buoy system that provides near real time Bearing Time Records (BTRs) and spectrograms to collect acoustic data for commercial software developers to power the design and deployment of advanced AI algorithms for undersea battlespace awareness.		
FY 2026 Plans: Work in support of Passive SONAR sensor AI testbed.		
Congressional Add: NavalX Regional T&E Accelerator	5.116	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: Develop a coordinated pipeline of commercialization opportunities to support dual-use startups and technologies. Provide training for Navy researchers to create dual-use ventures leveraging licensed Navy lab technology. Support existing mid-Technology Readiness Level (TRL) startups and provide continued support for Crucible Year 2 Alumni. The Crucible program provides the necessary connection between the NavalX Tech Bridges and national tech centers across the country and convenes the dual-use innovation ecosystem through NavalX Innovation Summits in various regions of the United States. Execute innovative pathways to transition federally funded and academia research into practical, deployable defense solutions, helping entrepreneurs and technologists build dual-use ventures to solve pressing Navy needs. ***FY 2026 Plans:*** N/A		
Congressional Add: AUKUS Pillar II Navy Initiatives	19.296	0.000
FY 2025 Accomplishments: AUKUS Pillar II focuses on the co-development, co-production, and co-sustainment of advanced capabilities to enhance warfighting capabilities in the Indo-Pacific region by accelerating R&D and acquisition while improving the defense industrial base. To help align resources and activity, the AUKUS Navies' CNO-level leadership co-signed a Statement of Intent that identifies and prioritizes areas common to the three navies and across all theaters. Simultaneously, the US Navy was allocated $20 million in FY25 funding for AUKUS Pillar II; all of that money is focused on supporting the Statement of Intent and was prioritized internally by OPNAV and Secretariat leadership. Specific tasks include: Develop uncrewed undersea vehicles mission payloads (effectors) to deliver warfighting effects within and to the subsea and seabed environment in order to support IJROC Key Operational Problems associated with anti-access, area denial environments and countering adversary Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance, and Targeting systems. Demonstrate torpedo interoperability via integration of allied capabilities onto US submarines to build combined technical understanding toward future converged AUKUS family of undersea weapons, support near-term torpedo capacity improvements, and de-risk SSN-AUKUS design and development activities. In support of the AUKUS Pillar II Electronic Warfare Working Group (EWWG), progress threat assessments for specific missions/vignettes; improve EW tactical data sharing; EW mission level performance within operational		

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
scenarios (leveraging coalition LVC modeling and simulation (M&S) capabilities; and advanced EW capability demonstrations within operational tests and exercises. Demonstrate the improvement in long range targeting that accrues from a combination of partner sensors data. Design data sharing architecture and dissemination via low latency streaming channels; implement design and test; use simulation for pre-exercise analysis; participate in TS or equivalent exercise; conduct post-exercise analyses and adjust simulation as necessary. ***FY 2026 Plans:*** N/A		
Congressional Add: NavalX Inland Empire Tech Bridge ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of NavalX Inland Empire Tech Bridge.	0.000	14.480
Congressional Add: NavalX Technology Innovation Acceleration ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of NavalX Technology Innovation Acceleration.	0.000	5.889
Congressional Add: Warfighter Generative AI Mixed Reality Immersive S ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of Warfighter Generative AI Mixed Reality Immersive Science.	0.000	5.696
Congressional Add: Rapid AI Deployment System for Combat Medicine ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of Rapid AI Deployment System for Combat Medicine.	0.000	6.757
Congressional Add: C-UAS Test Range ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of C-UAS Test Range.	0.000	3.861
Congressional Add: Low-Cost Unmanned Surface Vessel ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of Low-Cost Unmanned Surface Vessel.	0.000	3.379
Congressional Add: USMC Warfighting Lab Unmanned/Counter-Unmanned Sys	0.000	9.654

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603758N / *Navy Warfighting Exp & D emo*	**Project (Number/Name)** 9999 / *Congressional Adds*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
FY 2025 Accomplishments: N/A ***FY 2026 Plans:*** Initiate work in support of USMC Warfighting Lab Unmanned/Counter-Unmanned Systems.		
Congressional Add: Naval Test Range for Autonomous Systems Feasibilit ***FY 2025 Accomplishments:*** N/A ***FY 2026 Plans:*** Initiate work in support of Naval Test Range for Autonomous Systems Feasibilities.	0.000	1.931
Congressional Adds Subtotals	40.823	68.057

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603782N *I Mine and Expeditionary Warfare Advanced Technology*

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
Total Program Element	0.000	1.988	2.075	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.063
2917: *Shallow Water MCM Demos*	0.000	1.988	2.075	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.063

A. Mission Description and Budget Item Justification

Explosive ordnance disposal is a critical naval mission vital to the safety of service members and civilians. Highly trained Sailors and Marines utilize their knowhow and courage combined with state-of-the-art technology to remove unexploded ordnance, land/sea mines and even chemical, biological and nuclear weapons. The Department of War (DoW) Directive 5160.62 "DoW Executive Agent for Military Explosive Ordnance Disposal Technology & Training" guides research in this Program Element (PE). Unique needs and capabilities identified by the Joint Requirements Oversight Council (JROC) and the DoW EOD Program Board are also addressed by this PE and provide the vision and key objectives for the essential science and technology efforts that will enable the continued supremacy of U.S. Naval and Joint EOD forces in the 21st century. The strategy focuses and aligns Naval S&T with Naval missions, Joint Service EOD S&T with Joint EOD missions and future capability needs that address the complex challenges presented by both rising peer competitors and irregular/asymmetric warfare.

This PE primarily develops and demonstrates prototype Mine Countermeasures (MCM), Expeditionary Warfare and Joint EOD system components that support capabilities enabling Naval and Joint EOD Forces to influence operations ashore. Adversarial nations have the capability to procure, stockpile and rapidly deploy all types of naval mines, including new generation mines having sophisticated performance characteristics, throughout the littorals. They also have the capability to develop or modify explosive devices such as mines and unexploded ordnance to construct Improvised Explosive Devices (IEDs) for the purpose of targeting Joint Forces. Real world operations have demonstrated the requirement to quickly counter the mine threat. Current operations have also demonstrated the requirement to quickly counter the threat from explosive hazards and IEDs during DoW operations. Advanced technologies must rapidly detect and neutralize all mine types, from deep water to the inland objective. Advanced technologies must enable Joint EOD forces to detect/locate, gain access, diagnose, render safe, neutralize, recover, exploit and dispose of a broad spectrum of explosive hazards including unexploded ordnance and IEDs. This program supports the advanced development and integration of sensors, processing, warheads, and delivery vehicles to demonstrate improved Naval Warfare capabilities. It supports the advanced development and integration of sensors and tools for standoff capabilities such as detection and location of IEDs (particularly in dismounted operations), dismounted diagnosis of buried munitions and other explosive hazards, precision render safe and neutralization of surface munitions and other explosive hazards, and enhanced access to IEDs. It supports the Expeditionary Maneuver and Undersea Warfare-related FNC Enabling Capabilities (ECs).

Today's Sailors and Marines are enabled by naval Science and Technology (S&T). Since 1946, the Office of Naval Research (ONR) has fostered scientific research related to the maintenance of maritime superiority and national defense. ONR manages the Department of the Navy's (DON) portfolio of naval Basic and Applied research, and Advanced Technology Development investments to ensure naval forces can effectively deter conflict, but when called upon, fight, win and come home safe. Current investments hedge against uncertainty, providing solutions to commanders today, and options for the future. The Naval S&T budget supports higher guidance defined by the National Defense Strategy, and responds to requirements identified by the Secretary of the Navy through research priorities set by the Chief of Naval Research, coordinated across the Naval Research Enterprise (NRE), and outlined in the Naval R&D Framework.

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603782N *I Mine and Expeditionary Warfare Advanced Technology*

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	2.050	2.075	2.074	-	2.074
Current President's Budget	1.988	2.075	0.000	-	0.000
Total Adjustments	-0.062	0.000	-2.074	-	-2.074
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.062	0.000			
• Program Adjustments	0.000	0.000	-2.074	-	-2.074

Change Summary Explanation

Funding: The FY 2027 request was reduced by $2.074 million for elimination of program funding for Shallow Water MCM Demos.

Technical: No significant change.

Schedule: No significant change

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603782N / *Mine and Expeditionary Warfare Advanced Technology*	Project (Number/Name) 2917 / *Shallow Water MCM Demos*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2917: *Shallow Water MCM Demos*	0.000	1.988	2.075	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.063
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

This Project develops and demonstrates prototype technology for Mine Countermeasures (MCM), US Naval sea mining, and Expeditionary Warfare and Joint EOD system components that support capabilities enabling Naval and Joint EOD Forces to influence operations ashore. Adversarial nations have the capability to procure, stockpile and rapidly deploy all types of naval mines, throughout the littorals including new generation mines having sophisticated performance characteristics. They also have the capability to develop or modify explosive devices such as mines and unexploded ordnance to construct Improvised Explosive Devices (IEDs) for the purpose of targeting Joint Forces. Real world operations have demonstrated the requirement to quickly counter the mine threat. Current operations have also demonstrated the requirement to quickly counter the threat from explosive hazards and IEDs during DoW operations. Advanced technologies must rapidly detect and neutralize all mine types, from deep water to the inland objective. Advanced technologies must enable Joint EOD forces to detect/locate, gain access, diagnose, render safe, neutralize, recover, exploit and dispose of a broad spectrum of explosive hazards including unexploded ordnance and IEDs. This program supports the advanced development and integration of sensors, processing, warheads, and delivery vehicles to demonstrate improved Naval Warfare capabilities.

This Project supports the advanced development and integration of sensors and tools for standoff capabilities such as detection and location of IEDs (particularly in dismounted operations), dismounted diagnosis of buried munitions and other explosive hazards, precision render safe and neutralization of surface munitions and other explosive hazards, and enhanced access to IEDs. It supports advanced development for battlespace shaping weapons including advanced undersea weapons. It supports the MCM related FNC Enabling Capabilities (ECs).

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Joint EOD Demos	1.988	2.075	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: This activity focuses on developing and demonstrating technologies to support a standoff or remote capability for detection and location, diagnosis, render safe, neutralization and enhanced access. Efforts include: electromagnetic, electro-optical, radiographic and advanced sensors and systems for detection of explosive threat components including explosives, device housings/containers, and triggering mechanisms, standoff identification and confirmation of trace explosives, fusion of multi-sensor input for high confidence detection and diagnosis of buried and surface threats, highly dexterous manipulators and imitative controllers for lightweight, efficient (strength/weight ratio) dual manipulator systems integrated onto EOD robots for enhanced access, enhanced robotic autonomy to support EOD missions, data compression and visualization					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603782N / *Mine and Expeditionary Warfare Advanced Technology*	**Project (Number/Name)** 2917 / *Shallow Water MCM Demos*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
techniques to support precise render safe and neutralization, and neutralization devices containing reactive materials to neutralize devices with low collateral damage and rapid clearance of operational areas. This S&T investment supports the Joint Requirements Oversight Council (JROC) and DoW EOD Program Board validated requirements for Joint EOD missions. This S&T investment provides critical S&T transitions to acquisition programs. This investment in Joint EOD S&T is reported annually to the DoW EOD Program Board. This S&T investment is documented in the DoW EOD Technology and Training Plan which is reviewed as a decision brief annually by the DoW EOD Program Board. ***FY 2026 Plans:*** -Continue Joint Explosive Ordnance Disposal (JEOD), Advanced Technology: continue development and demonstration for JEOD functional areas including detect, access, diagnose, render safe/neutralize and disposal. -Continue Joint Explosive Ordnance Disposal (JEOD), Detection: continue efforts in the detection functional area. Specific efforts will include development and demonstration of advanced sensors, sensor fusion and signal processing (optical, electro-magnetic induction, ground penetrating radar, advanced magnetometers, acoustic and spectroscopic) for detection of explosives. The objective is to remotely detect surface and buried targets as well as bulk and trace explosives. -Continue Joint Explosive Ordnance Disposal (JEOD), Remote Access: continue efforts the access functional area. Specific efforts will include robotic manipulators, end effectors, haptics, and robotic digging capabilities. The objective is to enable remote access to explosive threats and unexploded ordnance. -Continue Joint Explosive Ordnance Disposal (JEOD), Man-Portable Prototypes: continue efforts in diagnose and render safe/ neutralize functional areas. Specific efforts will include the development and demonstration of man-portable prototypes. The objective is to assess the status of explosive threats and ordnance and render safe/neutralize at standoff. -Continue Joint Explosive Ordnance Disposal (JEOD), Rapid Large Area Clearance advanced technology development for rapid large area clearance of explosive threats. Specific effort includes collective demonstration of multiple prototypes for experimentation. The objective is to enable rapid large area clearance operations including detection of explosive threats, classification statistics and clearance of munitions from the operational area and render safe/neutralize/disposal at standoff.					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603782N / *Mine and Expeditionary Warfare Advanced Technology*	**Project (Number/Name)** 2917 / *Shallow Water MCM Demos*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
-Complete Joint Explosive Ordnance Disposal (JEOD), Acoustic Sensor: detection of buried explosive threats with seismic- acoustic sensor. Technology demonstration results provided input for future applications of this initial prototype toward new approaches to buried explosives detection on large platforms. ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A ***FY 2026 to FY 2027 Increase/Decrease Statement:*** Funding decrease from FY 2026 to FY 2027 is due to elimination of Shallow Water MCM Demo efforts.					
Accomplishments/Planned Programs Subtotals	1.988	2.075	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

THIS PAGE INTENTIONALLY LEFT BLANK

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy												Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*					R-1 Program Element (Number/Name) PE 0603801N *I Innovative Naval Prototypes (INP) Adv Tec Dev*							
COST ($ in Millions)	**Prior Years**	**FY 2025**	**FY 2026**	**FY 2027 Base**	**FY 2027 OOC**	**FY 2027 Total**	**FY 2028**	**FY 2029**	**FY 2030**	**FY 2031**	**Cost To Complete**	**Total Cost**
Total Program Element	0.000	138.667	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	138.667
1108: *METEOR*	0.000	14.608	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.608
2731: *High Energy Laser Counter ASCM Project (HELCAP)*	0.000	0.701	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.701
3452: *ELEKTRA*	0.000	6.022	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.022
3455: *MINERVA*	0.000	6.730	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.730
3456: *Full Spectrum Undersea Warfare*	0.000	11.624	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.624
3457: *Long Range Targeting*	0.000	28.421	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.421
3459: *Super Swarm (SS)*	0.000	19.153	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.153
3461: *MASS*	0.000	4.950	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.950
3462: *DEALRS*	0.000	5.773	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.773
3463: *MATes*	0.000	4.950	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.950
3507: *Chimera*	0.000	16.330	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.330
5899: *Precision Fire Control*	0.000	10.041	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.041
9999: *Congressional Adds*	0.000	9.364	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.364

Note

The Innovative Naval Prototypes (INP) Adv Tech Dev (6.3) PE 0603801N has been consolidated into the Future Naval Capabilities Adv Tech Dev (6.3) PE 0603673N beginning in FY2026 in alignment with the DoW Implementation Plan from the Commission on PPBE Interim Report for PE/BLI Consolidation.

A. Mission Description and Budget Item Justification

The Office of Naval Research (ONR) portfolio includes efforts that solve problems and respond to mission requirements, as well as, exploratory research for new ideas and breakthrough capabilities. Larger in scope, scale and risk Innovative Naval Prototypes (INP) are selected for their high-payoff and potential to revolutionize operational concepts. The efforts described in this Program Element (PE) continue the Applied Research work in PE 0602792N for promising INPs with Advanced Technology Development activities. INP investments define the future of U.S. naval forces. Due to high technical risk, INPs often have long trial-and-error timeframes to work through challenges, but typically no more than three years between decision points. INP efforts mature technologies from a Technology Readiness Level (TRL) of 2 or 3 to a TRL of 6. As such, INPs require applied and advanced technology development funding to bridge from concept to working prototype. INPs prove technological

and capability potential, validate production feasibility, and acquisition potential. ONR demonstrates INPs in relevant environments. Successful experimentation and demonstrations present the Department of the Navy with disruptive capabilities that may lead to a new acquisition programs. INPs are selected by senior leadership in the Department of the Navy.

This Program Element (PE) funds Advanced Technology Development (ATD) that includes development of subsystems and components and efforts to integrate subsystems and components into system prototypes for field experiments and/or tests in a simulated environment. Efforts in this PE generally have Technology Readiness Levels TRL) of 4 (component and/or breadboard validation in laboratory environment.), 5 (component and/or breadboard validation in relevant environment.), or 6 (system/subsystem model or prototype demonstration in a relevant environment).

INP investments represent game changing technologies with the potential to revolutionize operational concepts. They are disruptive in nature, as they would dramatically change the way naval forces fight. Due to high technical risk, INPs typically have long duration but have no more than three years between decision points. INPs do not develop hardware for service use, rather they prove technological and production feasibility, and show naval utility and acquisition potential. The Office of Naval Research (ONR) demonstrates INPs in relevant environments. Successful experimentation and demonstrations present the Department of the Navy with disruptive capabilities that may lead to the obsolescence of existing capabilities and acquisition programs. The Department of the Navy would have to make significant acquisition decisions to integrate the new technological capabilities into naval warfighting systems. INPs are selected by a process that involves senior leadership in the Department of the Navy.

Information security concerns preclude fully detailed descriptions of project efforts, research activities, and technology development plans. Specific information on each project and activity will be provided separately to the Congressional oversight committees.

Due to the number of efforts in this PE, the programs described herein are representative of the work included in this PE.

B. Program Change Summary ($ in Millions)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Previous President's Budget	140.988	0.000	0.000	-	0.000
Current President's Budget	138.667	0.000	0.000	-	0.000
Total Adjustments	-2.321	0.000	0.000	-	0.000
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.985	0.000			
• SBIR/STTR Transfer	-0.336	0.000			
• Rate/Misc Adjustments	0.000	0.000	0.000	-	0.000

Exhibit R-2, RDT&E Budget Item Justification: PB 2027 Navy	Date: April 2026
Appropriation/Budget Activity 1319: *Research, Development, Test & Evaluation, Navy I* BA 3: *Advanced Technology Development (ATD)*	**R-1 Program Element (Number/Name)** PE 0603801N *I Innovative Naval Prototypes (INP) Adv Tec Dev*

Congressional Add Details ($ in Millions, and Includes General Reductions)	FY 2025	FY 2026
Project: 9999: *Congressional Adds*		
Congressional Add: *GYPSY long range loitering munition*	9.364	0.000
Congressional Add Subtotals for Project: 9999	9.364	0.000
Congressional Add Totals for all Projects	9.364	0.000

Change Summary Explanation

Funding: Not applicable.

Schedule: Not applicable.

Technical: Not applicable

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 1108 / *METEOR*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
1108: *METEOR*	0.000	14.608	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	14.608
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 1108, METEOR to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, Project 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

Navy surface combatants have Capability/capacity gaps to defend against high volume attacks in Integrated Air and Missile Defense (IAMD). The objective of METEOR is to demonstrate tactically significant, non-kinetic, High Power Microwave (HPM) payload integration onto Naval platforms to defeat, track, engage and assess operational threats while assessing integrated sensors and weapon control options. The METEOR HPM weapon development will provide capability with low cost-per-shot, deep magazine, tactically significant range, short time engagement for multi-target approach, dual deception and defeat capability. This Innovative Naval Prototype (INP) will assess the military utility of a ship-based Integrated Air and Missile Defense (IAMD) HPM weapon, to develop performance requirements via effects and lethality studies, to evaluate current HPM prototype hardware for those requirements, and to mature promising HPM technologies. To assess military utility as part of layered defense in stressing scenarios, METEOR will quantify effectiveness against priority threats, evaluate Battle Damage Assessment (BDA) techniques, and perform mission modeling.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: METEOR	14.608	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Demonstrate tactically significant, non-kinetic, High-Power Microwave (HPM) payload integration onto Naval platforms to defeat, track, engage and assess operational threats while assessing integrated sensors and weapon control options. Transition prior REDCAT hardware into parallel activities to provide a shipboard weapon prototype for integration in FY26 as well as a test bed for continued technology maturation and evaluation. METEOR is a rename that will leverage previous work completed under Proj 3464 REDCAT to support a prototype build capable of at-sea demonstration after land-based testing.					
FY 2026 Plans: N/A					
FY 2027 Base Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 1108 / *METEOR*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	14.608	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 2731 / *High Energy Laser Counter ASCM Project (HELCAP)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
2731: *High Energy Laser Counter ASCM Project (HELCAP)*	0.000	0.701	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	0.701
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The High Energy Laser Counter ASCM Project (HELCAP) will expedite the development, experimentation, integration and demonstration of critical technologies to defeat crossing Anti-Ship Cruise Missiles (ASCM) by addressing the remaining technical challenges, e.g.: atmospheric turbulence, automatic target identification and aim point selection, precision target tracking with low jitter in high clutter conditions, advanced beam control, and higher power HEL development.
HELCAP will assess, develop, experiment, and demonstrate the various laser weapon system technologies and methods of implementation required to defeat ASCMs in a crossing engagement.

HELCAP activities in this project (0603801N) include technology assessments, laser lethality investigations, and advanced beam control. Component and Subsystem level operability is being conducted under this project specifically the Beam Control subsystem including active tracking and advanced atmospheric compensation using Adaptive Optics. The Beam Director subsystem testing will occur in a simulated environment (land based) against surrogate ASCM targets. Other subsystems being developed and tested under this project include the automated engagement sequencing, HEL targets and diagnostics subsystems, and an HEL interface compatible with a range of competing HEL source technologies. This project passes technology to follow on HELCAP activities under Program Element (PE) 0603925N Directed Energy and Electric Weapon Systems.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: New Accomplishment/Planned Program Entry	0.701	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	0.701	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 2731 / *High Energy Laser Counter ASCM Project (HELCAP)*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3452 / *ELEKTRA*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3452: *ELEKTRA*	0.000	6.022	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.022
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Complex multi-domain threats can overwhelm the operator and individual platforms ability to defend the force. The ELEKTRA INP effort is developing "Human on the Loop" Artificial Intelligence (AI) enabled algorithms to perform force level kinetic/non-kinetic kill chain optimization and coordination across multiple domains at machine to machine speeds to increase the lethality and survivability of the Force. ELEKTRA will demonstrate AI/ML ability to coordinate kinetic/non kinetic effects autonomously with heterogeneous platforms, the ability to operate in degraded environments for hours and the ability to coordinate and execute domain kill chains simultaneously. It will deploy artificial intelligent (AI) and machine learning (ML) architecture, neural networked computing and large data handling to enable real time, force level effects assignment, coordination and resource management. The Activity identified in Project Unit 3452 specifically addresses Advanced Technology Development in support of the ELEKTRA INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: ELEKTRA	6.022	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Complex multi-domain threats can overwhelm the operator and individual platforms ability to defend the force. The ELEKTRA INP effort is developing "Human on the Loop" Artificial Intelligence (AI) enabled algorithms to perform force level kinetic/non-kinetic kill chain optimization and coordination across multiple domains at machine to machine speeds to increase the lethality and survivability of the Force. ELEKTRA will demonstrate AI/ML ability to coordinate kinetic/non kinetic effects autonomously with heterogeneous platforms, the ability to operate in degraded environments for hours and the ability to coordinate and execute domain kill chains simultaneously. It will deploy artificial intelligent (AI) and machine learning (ML) architecture, neural networked computing and large data handling to enable real time, force level effects assignment, coordination and resource management.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3452 / *ELEKTRA*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	6.022	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3455 / *MINERVA*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3455: *MINERVA*	0.000	6.730	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	6.730
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The need to operate in a multiple domain environment against highly capable peers requires improved decision quality and reduced decision timelines. MINERVA will develop AI and Machine-Learning (ML) capabilities to improve mission planning, intelligence gathering, execution and assessment. Minerva will deliver next-generation decision aids by combining operations research with emerging AI capabilities to create learning, self-adaptive automation that supports Composite Warfare Commander's (CWC) and their staffs at the Fleet, Force and Group echelons. It will establish a DevOps environment that includes warfighter staffs in the development and integration of new capabilities. The Activity identified in Project Unit 3455 specifically addresses Advanced Technology Development in support of the MINERVA INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: MINERVA	6.730	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: The need to operate in a multiple domain environment against highly capable peers requires improved decision quality and reduced decision timelines. MINERVA will develop AI and Machine-Learning (ML) capabilities to improve mission planning, intelligence gathering, execution and assessment. Minerva will deliver next-generation decision aids by combining operations research with emerging AI capabilities to create learning, self-adaptive automation that supports Composite Warfare Commander's (CWC) and their staffs at the Fleet, Force and Group echelons. It will establish a DevOps environment that includes warfighter staffs in the development and integration of new capabilities.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	6.730	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3455 / *MINERVA*

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3456 / *Full Spectrum Undersea Warfare*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3456: *Full Spectrum Undersea Warfare*	0.000	11.624	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.624
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 3456, Full Spectrum Undersea Warfare (FSUSW) to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

The Full Spectrum Undersea Warfare (FSUW) Project will develop new technology for offensive and defensive warfare conducted on the seabed, in the sea (i.e. subsea), and from the sea. This INP focuses on Theatre Undersea Warfare (TUSW), Joint Targeting and Strike, and Subsea and Seabed Warfare (SSW). There are five thrust areas of the FSUW INP that are key to enabling Chief of Naval Operations Guidance (CNOG), Distributed Maritime Operations (DMO), and the Commandant's Stand in Force with manned and unmanned warfighting capability. These thrust areas were specifically chosen in direct collaboration with STRATCOM, INDO-PACOM, Fleet and Undersea Warfare Commanders and validated with regular Flag engagements. These advanced technology developments will enable future undersea weapon systems (e.g., Maritime Strike Tomahawk and ADCAP variants), COCOM campaign, and operational plans. FSUW thrust areas include 1) Undersea effectors, 2) Integrated expeditionary subsea system of systems, 3) Multi-Vehicle Torpedo Tube Development System (MVTTDS) for payload A, 4) Undersea UAV for Over-The-Horizon (OTH) effects and 5) Undersea Launched Devices to enable Commanding Officers and Regional Combatant Commander effects. The thrust areas are technically an operational interconnected. Selected concepts from advanced research will be integrated into viable representative prototypes for field experimentation in a relevant environment. Lessons learned from field experimentation will inform continued applied research spirals to remedy technical shortcomings, expand capability, or define an alternate approach. The Activity identified in Full Spectrum Undersea Warfare, Project 3458, specifically addresses Advanced Technology Development in support of the Full Spectrum Undersea Warfare INP effort. The Applied Research Budget Activity (BA) 2 funding is in a separate Program Element (PE) 0602792N FSUW INP, Project 3456.

Information security concerns preclude fully detailed descriptions of project efforts, research activities, and technology development plans. Specific information on each project and activity will be provided separately to the Congressional oversight committees.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Full Spectrum Undersea Warfare (FSUW)	11.624	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3456 / *Full Spectrum Undersea Warfare*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	11.624	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0602792N/3456: *Full Spectrum Undersea Warfare (FSUW)*	42.049	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	87.159

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3457 / *Long Range Targeting*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3457: *Long Range Targeting*	0.000	28.421	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	28.421
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 3457, Long Range Targeting (LRT) to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

Long Range Targeting emphasizes the specific naval use of HF Over the Horizon Radar (OTHR) on maritime platforms and forward-based positive identification technologies to fill gaps in long-range fires kill chains. Technologies within this activity will enable integrated long range naval fires. Investments include technologies for OTH radar antennas, HF antenna arrays, signal processing, and electronic surveillance. Activity identified in Project Unit 3457 specifically addresses Advanced Technology Development in support of the LRT INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Long Range Targeting	28.421	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Long Range Targeting emphasizes the specific naval use of HF Over the Horizon Radar (OTHR) on maritime platforms and forward-based positive identification technologies to fill gaps in long-range fires kill chains. Technologies within this activity will enable integrated long range naval fires. Investments include technologies for OTH radar antennas, HF antenna arrays, signal processing, and electronic surveillance. Activity identified in Project Unit 3457 specifically addresses Advanced Technology Development in support of the LRT INP effort.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3457 / *Long Range Targeting*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	28.421	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3459 / *Super Swarm (SS)*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3459: *Super Swarm (SS)*	0.000	19.153	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.153
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Swarming is a concept that allows for multi-domain, heterogeneous swarms of unmanned systems capable of rendering the counter's ability to scale either inadequate or irrelevant and includes offensive and defensive operations, own and adversarial employment, and a physical battlespace ranging from open ocean to ashore. The Super Swarm (SS) INP effort will develop an autonomous control system for multiple USV's consisting of cooperative task allocation, cooperative route planning/behaviors and shared situational awareness. The Swarm autonomy technology is leveraged by other programs including the Medium Displacement Unmanned Surface Vehicle (MDUSV) and the Autonomous USV FNC program. It will consist of the employment of sustainable large-scale robotic swarm warfare across all domains ahead of our adversaries to obviate costly and vulnerable legacy platforms and to gain a competitive advantage. The Activity identified in Project Unit 3459 specifically addresses Advanced Technology Development in support of the Super Swarm INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Super Swarm (SS)	19.153	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Swarming is a concept that allows for multi-domain, heterogeneous swarms of unmanned systems capable of rendering the counter's ability to scale either inadequate or irrelevant and includes offensive and defensive operations, own and adversarial employment, and a physical battlespace ranging from open ocean to ashore. The Super Swarm (SS) INP effort will develop an autonomous control system for multiple USV's consisting of cooperative task allocation, cooperative route planning/behaviors and shared situational awareness. The Swarm autonomy technology is leveraged by other programs including the Medium Displacement Unmanned Surface Vehicle (MDUSV) and the Autonomous USV FNC program. It will consist of the employment of sustainable large-scale robotic swarm warfare across all domains ahead of our adversaries to obviate costly and vulnerable legacy platforms and to gain a competitive advantage.					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans:					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3459 / *Super Swarm (SS)*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
N/A					
Accomplishments/Planned Programs Subtotals	19.153	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3461 / *MASS*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3461: *MASS*	0.000	4.950	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.950
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The rising use of air, surface, and sub-surface unmanned and autonomous systems requires a paradigm shift in the development, production, and life-cycle management of these systems in order to gain a competitive advantage against adversarial capabilities as well as allow for fielding of significant numbers (1000's to 10,000's) in an increasingly budget-constrained acquisition environment. The growth in rapid prototyping and additive manufacturing technologies presents an opportunity to capitalize on these advances though technical development and demonstration efforts focused on scale-up both in terms of rapid production of relevant quantities as well as greatly increasing the physical size of platforms produced far beyond what is currently achievable. Manufacturing of Autonomous Systems at Scale (MASS) efforts will utilize wide range of advanced manufacturing methods combined with adaptive digital design processes with "Design for Low-Cost Platform Attriteability" as a major attribute to avoid the platform cost growths normally associated with exquisite systems development. This also represents the ability to rapidly modify platform attributes based on evolving operational needs and quickly insert into build process without costly retooling. Secondary goals focus on increasing commonality of critical components across platforms and design of these in modular fashion in order to manage supply chain vulnerability. Lastly, the project will look at ability to place manufacturing capability as far forward/afloat as possible to reduce the logistics tail and speed delivery of capability at-scale into the fleet. The activity identified in Project Unit 3461 MASS specifically addresses Advanced Technology Development in support of the MASS effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Manufacture of Autonomous Systems at Scale (MASS)	4.950	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	4.950	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3461 / *MASS*

C. Other Program Funding Summary ($ in Millions)

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3462 / *DEALRS*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3462: *DEALRS*	0.000	5.773	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.773
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 3462, Deployment & Employment of Autonomous Long Range Systems (DEALRS) to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

Adversary Anti-Access and Area Denial (A2/AD) capabilities continue to improve but remain focused on targeting specific US and joint force capabilities. The Deployment and Employment of Autonomous Long Range Systems (DEALRS) project will develop technologies that sidestep, operate below the threshold, or deplete adversary A2/AD capabilities. DEALRS will specifically develop technologies to enable low-cost unmanned systems that can maneuver across theater-level ranges to penetrate, operate within, and launch strikes from within adversary A2/AD system coverage. This project will develop technologies to increase the range and endurance of autonomous systems while maintaining tactically relevant speeds, loiter times, and signatures with low cost. It will also address technologies that enable the marsupial launch of terminal engagement autonomous unmanned systems across all domains from larger and/or longer-range host systems that bring them to the launch area and the associated technologies needed to ensure roboticized and autonomous startup and launch of the marsupial systems without human intervention. The Activity identified in Project Unit 3462 DEALRS specifically addresses Advanced Technology Development in support of the INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Deployment & Employment of Autonomous Long Range Systems (DEALRS)	5.773	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Adversary Anti-Access and Area Denial (A2/AD) capabilities continue to improve but remain focused on targeting specific US and joint force capabilities. The Deployment and Employment of Autonomous Long Range Systems (DEALRS) project will develop technologies that sidestep, operate below the threshold, or deplete adversary A2/AD capabilities. DEALRS will specifically develop technologies to enable low-cost unmanned systems that can maneuver across theater-level ranges to penetrate, operate within, and launch strikes from within adversary A2/AD system coverage. This project will develop technologies to increase the range and endurance of autonomous systems while maintaining tactically relevant speeds, loiter times, and signatures with low cost. It will also address technologies that enable the marsupial launch of terminal engagement autonomous unmanned systems across all domains from larger and/or longer-range host systems that bring them to the launch area and the associated technologies needed to ensure roboticized and					

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3462 / *DEALRS*

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
autonomous startup and launch of the marsupial systems without human intervention. The Activity identified in Project Unit 3462 DEALRS specifically addresses Advanced Technology Development in support of the INP effort. ***FY 2026 Plans:*** N/A ***FY 2027 Base Plans:*** N/A ***FY 2027 OOC Plans:*** N/A					
Accomplishments/Planned Programs Subtotals	5.773	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0602792N/3462: *DEALRS*	6.930	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	17.493

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3463 / *MATes*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3463: *MATes*	0.000	4.950	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	4.950
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 3463, Manned and Autonomous Teams (MATes) to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

Traditionally, the utilization of autonomous systems is either operationally segregated from manned operations or requires a significant amount of human oversight when operating in conjunction with manned assets, which mitigates some of the advantage from using them. The goal of the Manned and Autonomous Teams (MATes) project is to develop autonomic robotic technology and collaborative autonomous behaviors that seamlessly operate across all domains in conjunction with manned units, allowing for real-time adaptation and optimization in a manner that streamlines the element of human interaction needed to share mission goals. This technology will monitor human or manned system teammate state, behavior, mission, and adversary threat status to anticipate and act in a tactically appropriate manner that is predictable, communicable, and trusted by the human/manned teammates and which enables autonomous system optimization in coordination with the human/manned teammate and mission objectives. Intuitive human/autonomous system interfaces will be developed to allow focus on higher-order decision-making tasks by the operators allowing for large numbers of autonomous systems (100's or 1000's) to be managed in support of manned operations. The activity identified in Project Unit 3463 MAtes specifically addresses Advanced Technology Development in support of the MATes effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Manned and Autonomous Teams (MATes)	4.950	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	4.950	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3463 / *MATes*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0602792N/3463: *MATes*	9.900	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	19.503

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 3507 / *Chimera*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
3507: *Chimera*	0.000	16.330	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.330
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 3507, Chimera to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

Details at a higher classification

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Chimera	16.330	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
Description: Details at a higher classification					
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	16.330	0.000	0.000	0.000	0.000

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0602792N/3507: *Chimera*	34.915	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	46.986

Remarks

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 3507 / *Chimera*

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 5899 / *Precision Fire Control*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
5899: *Precision Fire Control*	0.000	10.041	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	10.041
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

Note

Funds have been realigned from PE 0603801N, Innovative Naval Prototypes (INP) ATD, PU 5899, Precision Fire Control to PE 0603673N, Future Naval Capabilities Advanced Tech Dev, PU 2966 S&T Campaigns as part of a PE consolidation effort. This INP has its own R2A within PE 0603673N PU 2966 for ease in tracking.

A. Mission Description and Budget Item Justification

The Precision Fire Control (PFC) effort will develop a fire control architecture that delivers high precision, high update rate guidance solutions to enable cruise missile defense with small, low-cost interceptors and dramatically increase number of interceptors per ship or Expeditionary Advanced Base. It will develop fire control capability for multiple interceptors (missiles and gun projectiles) that contribute to layered defense of surface combatants, expeditionary forces, and homeland protection. Develop PFC-enabled low-cost missile (LCM) based on existing 2.75" rocket components.

The Activity identified in Proj: 5899 Precision Fire Control (PFC) specifically addresses Advanced Technology Development in support of the PFC INP effort.

B. Accomplishments/Planned Programs ($ in Millions, Article Quantities in Each)	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total
Title: Precision Fire Control	10.041	0.000	0.000	0.000	0.000
Articles:	-	-	-	-	-
FY 2026 Plans: N/A					
FY 2027 Base Plans: N/A					
FY 2027 OOC Plans: N/A					
Accomplishments/Planned Programs Subtotals	10.041	0.000	0.000	0.000	0.000

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy		Date: April 2026
Appropriation/Budget Activity 1319 / 3	**R-1 Program Element (Number/Name)** PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	**Project (Number/Name)** 5899 / *Precision Fire Control*

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
• RDTEN/0602792N/5899: *Precision Fire Control*	14.040	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	35.633

Remarks

D. Acquisition Strategy

N/A

Exhibit R-2A, RDT&E Project Justification: PB 2027 Navy			Date: April 2026
Appropriation/Budget Activity 1319 / 3	R-1 Program Element (Number/Name) PE 0603801N / *Innovative Naval Prototypes (INP) Adv Tec Dev*	Project (Number/Name) 9999 / *Congressional Adds*	

COST ($ in Millions)	Prior Years	FY 2025	FY 2026	FY 2027 Base	FY 2027 OOC	FY 2027 Total	FY 2028	FY 2029	FY 2030	FY 2031	Cost To Complete	Total Cost
9999: *Congressional Adds*	0.000	9.364	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	9.364
Quantity of RDT&E Articles		-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

Congressional add projects not included in other efforts.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2025	FY 2026
Congressional Add: GYPSY long range loitering munition	9.364	0.000
FY 2025 Accomplishments: This program will provide for the expansion of previous work funded by ONR to develop advanced long-range loitering munitions. The prime objectives are to: Develop Unmanned/Autonomous Vehicle (UAV) Requirements. Conduct a Design Study to support future development of an experimental UAV platform. Develop and flight test prototypes. Manufacturing scale-up and production		
FY 2026 Plans: N/A		
Congressional Adds Subtotals	9.364	0.000

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A