# Department of Defense FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
Research, Development, Test & Eval, Navy	18,738,363	20,155,115	130,444	164,410	20,449,969	
Total Research, Development, Test & Evaluation	18,738,363	20,155,115	130,444	164,410	20,449,969	

# Department of Defense FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

FY 2021 OCO for

	FY 2021	FY 2021 OCO for Base	Direct War and Enduring	FY 2021 Total	FY 2021 Total
Appropriation	Base	Requirements	Costs	0C0 	(Base + OCO)
Research, Development, Test & Eval, Navy	21,427,048		59,562	59,562	21,486,610
Total Research, Development, Test & Evaluation	21,427,048		59,562	59,562	21,486,610

## Department of Defense FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Summary Recap of Budget Activities		FY 2020 Base Enacted		OCO Enacted	
Basic Research		650,800			650,800
Applied Research	1,002,162	1,159,739			1,159,739
Advanced Technology Development	831,351	807,280			807,280
Advanced Component Development & Prototypes	4,033,262	5,329,143		40,006	5,369,149
System Development & Demonstration	5,840,606	6,112,602		1,122	6,113,724
Management Support	1,437,664	999,165	130,444		1,129,609
Operational Systems Development	4,931,294	5,096,386		123,282	5,219,668
Software and Digital Technology Pilot Programs					
Total Research, Development, Test & Evaluation	18,738,363	20,155,115	130,444	164,410	20,449,969
Summary Recap of FYDP Programs					
Strategic Forces	234,760	204,609			204,609
General Purpose Forces	1,866,214	1,770,467		15,000	1,785,467
Intelligence and Communications	707,765	692,955			692,955
Research and Development	14,039,673	15,652,568	130,444	41,128	15,824,140
Central Supply and Maintenance	63,255	74,961			74,961
Administration and Associated Activities	2,376	1,460			1,460
Space	40,735	15,868			15,868
Classified Programs	1,783,585	1,742,227		108,282	1,850,509
Total Research, Development, Test & Evaluation	18,738,363	20,155,115	130,444	164,410	20,449,969

# Department of Defense FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

FY 2021 OCO for

Summary Recap of Budget Activities	FY 2021 Base	FY 2021 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Basic Research	603,087				603,087
Applied Research	953,175				953,175
Advanced Technology Development	760,396				760,396
Advanced Component Development & Prototypes	6,503,074		55,418	55,418	6,558,492
System Development & Demonstration	6,263,883		1,144	1,144	6,265,027
Management Support	991,222				991,222
Operational Systems Development	5,327,043		3,000	3,000	5,330,043
Software and Digital Technology Pilot Programs	25,168				25,168
Total Research, Development, Test & Evaluation	21,427,048		59,562	59,562	21,486,610
Summary Recap of FYDP Programs					
Strategic Forces	330,493				330,493
General Purpose Forces	1,792,408		3,000	3,000	1,795,408
Intelligence and Communications	730,315				730,315
Research and Development	16,655,343		56,562	56,562	16,711,905
Central Supply and Maintenance	51,865				51,865
Administration and Associated Activities	1,536				1,536
Space	70,056				70,056
Classified Programs	1,795,032				1,795,032
Total Research, Development, Test & Evaluation	21,427,048		59,562	59,562	21,486,610

## Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Summary Recap of Budget Activities	FY 2019 (Base + OCO)	FY 2020 Base Enacted		FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)
Basic Research	662,024	650,800			650,800
Applied Research	1,002,162	1,159,739			1,159,739
Advanced Technology Development	831,351	807,280			807,280
Advanced Component Development & Prototypes	4,033,262	5,329,143		40,006	5,369,149
System Development & Demonstration	5,840,606	6,112,602		1,122	6,113,724
Management Support	1,437,664	999,165	130,444		1,129,609
Operational Systems Development	4,931,294	5,096,386		123,282	5,219,668
Software and Digital Technology Pilot Programs					
Total Research, Development, Test & Evaluation	18,738,363	20,155,115	130,444	164,410	20,449,969
Summary Recap of FYDP Programs					
Strategic Forces	234,760	204,609			204,609
General Purpose Forces	1,866,214	1,770,467		15,000	1,785,467
Intelligence and Communications	707,765	692,955			692,955
Research and Development	14,039,673	15,652,568	130,444	41,128	15,824,140
Central Supply and Maintenance	63,255	74,961			74,961
Administration and Associated Activities	2,376	1,460			1,460
Space	40,735	15,868			15,868
Classified Programs	1,783,585	1,742,227		108,282	1,850,509
Total Research, Development, Test & Evaluation	18,738,363	20,155,115	130,444	164,410	20,449,969

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

FY 2021 OCO for

Summary Recap of Budget Activities	FY 2021 Base	FY 2021 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)
Basic Research	603,087				603,087
Applied Research	953,175				953,175
Advanced Technology Development	760,396				760,396
Advanced Component Development & Prototypes	6,503,074		55,418	55,418	6,558,492
System Development & Demonstration	6,263,883		1,144	1,144	6,265,027
Management Support	991,222				991,222
Operational Systems Development	5,327,043		3,000	3,000	5,330,043
Software and Digital Technology Pilot Programs	25,168				25,168
Total Research, Development, Test & Evaluation	21,427,048		59,562	59,562	21,486,610
Summary Recap of FYDP Programs					
Strategic Forces	330,493				330,493
General Purpose Forces	1,792,408		3,000	3,000	1,795,408
Intelligence and Communications	730,315				730,315
Research and Development	16,655,343		56,562	56,562	16,711,905
Central Supply and Maintenance	51,865				51,865
Administration and Associated Activities	1,536				1,536
Space	70,056				70,056
Classified Programs	1,795,032				1,795,032
Total Research, Development, Test & Evaluation	21,427,048		59,562	59,562	21,486,610

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
1	0601103N	University Research Initiatives	01	155,539	167,850			167,850	U
2	0601152N	In-House Laboratory Independent Research	01	19,123	19,121			19,121	U
3	0601153N	Defense Research Sciences	01	487,362	463,829			463,829	U
	Basic	Research		662,024	650,800			650,800	
4	0602114N	Power Projection Applied Research	02	26,903	28,546			28,546	U
5	0602123N	Force Protection Applied Research	02	175,857	215,517			215,517	U
6	0602131M	Marine Corps Landing Force Technology	02	61,593	69,104			69,104	U
7	0602235N	Common Picture Applied Research	02	40,559	42,846			42,846	U
8	0602236N	Warfighter Sustainment Applied Research	02	64,010	95,825			95,825	U
9	0602271N	Electromagnetic Systems Applied Research	02	74,934	88,497			88,497	U
10	0602435N	Ocean Warfighting Environment Applied Research	02	87,715	82,582			82,582	U
11	0602651M	Joint Non-Lethal Weapons Applied Research	02	6,137	6,346			6,346	U
12	0602747N	Undersea Warfare Applied Research	02	75,998	98,075			98,075	U
13	0602750N	Future Naval Capabilities Applied Research	02	135,523	152,012			152,012	U
14	0602782N	Mine and Expeditionary Warfare Applied Research	02	37,399	54,074			54,074	U
15	0602792N	Innovative Naval Prototypes (INP) Applied Research	02	151,176	152,354			152,354	U

## Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

Applied Research

	Program Element Number	Item 	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
1	0601103N	University Research Initiatives	01	116,816				116,816	U
2	0601152N	In-House Laboratory Independent Research	01	19,113				19,113	U
3	0601153N	Defense Research Sciences	01	467,158				467,158	
	Basic	Research		603,087				603,087	
4	0602114N	Power Projection Applied Research	02	17,792				17,792	U
5	0602123N	Force Protection Applied Research	02	122,281				122,281	U
6	0602131M	Marine Corps Landing Force Technology	02	50,623				50,623	Ū
7	0602235N	Common Picture Applied Research	02	48,001				48,001	U
8	0602236N	Warfighter Sustainment Applied Research	02	67,765				67,765	Ū
9	0602271N	Electromagnetic Systems Applied Research	02	84,994				84,994	U
10	0602435N	Ocean Warfighting Environment Applied Research	02	63,392				63,392	U
11	0602651M	Joint Non-Lethal Weapons Applied Research	02	6,343				6,343	U
12	0602747N	Undersea Warfare Applied Research	02	56,397				56,397	U
13	0602750N	Future Naval Capabilities Applied Research	02	167,590				167,590	Ū
14	0602782N	Mine and Expeditionary Warfare Applied Research	02	30,715				30,715	U
15	0602792N	Innovative Naval Prototypes (INP)	02	160,537				160,537	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number		Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
16	0602861N	Science and Technology Management - ONR Field Acitivities	02	64,358	73,961			73,961	
	Appli	ed Research		1,002,162	1,159,739			1,159,739	
17	0603123N	Force Protection Advanced Technology	03	32,140	40,286			40,286	U
18	0603271N	Electromagnetic Systems Advanced Technology	03	8,639	9,499			9,499	U
19	0603640M	USMC Advanced Technology Demonstration (ATD)	03	170,659	212,347			212,347	Ū
20	0603651M	Joint Non-Lethal Weapons Technology Development	03	12,956	13,307			13,307	U
21	0603673N	Future Naval Capabilities Advanced Technology Development	03	210,631	222,477			222,477	Ū
22	0603680N	Manufacturing Technology Program	03	57,322	65,138			65,138	U
23	0603729N	Warfighter Protection Advanced Technology	03	39,949	34,149			34,149	Ū
24	0603758N	Navy Warfighting Experiments and Demonstrations	03	64,422	67,739			67,739	U
25	0603782N	Mine and Expeditionary Warfare Advanced Technology	03	38,541	13,335			13,335	U
26	0603801N	Innovative Naval Prototypes (INP) Advanced Technology Development	03	196,092	•			129,003	
	Advar	aced Technology Development		831,351	807,280			807,280	
27	0603178N	Medium and Large Unmanned Surface Vehicles (USVs)	04						U
28	0603207N	Air/Ocean Tactical Applications	04	29,136	40,643		2,400	43,043	U

### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

28 0603207N Air/Ocean Tactical Applications

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Line Element FY 2021 OCO for Base and Enduring Total Total е No Number Costs OCO (Base + OCO) c Item Act Base Requirements 16 0602861N Science and Technology Management - 02 76,745 76,745 U ONR Field Acitivities Applied Research 953,175 953,175 17 0603123N Force Protection Advanced Technology 03 24,410 24,410 U 18 0603271N Electromagnetic Systems Advanced 8,008 8,008 U Technology 19 0603640M USMC Advanced Technology 0.3 219,045 219,045 U Demonstration (ATD) Joint Non-Lethal Weapons Technology 03 20 0603651M 13,301 13,301 U Development 21 0603673N Future Naval Capabilities Advanced 246,054 246,054 U Technology Development 22 0603680N Manufacturing Technology Program 60,122 U 03 60,122 Warfighter Protection Advanced 23 0603729N 0.3 4,851 4,851 U Technology Navy Warfighting Experiments and 24 0603758N 03 40,709 40,709 U Demonstrations 25 0603782N Mine and Expeditionary Warfare 03 1,948 1,948 U Advanced Technology 26 0603801N Innovative Naval Prototypes (INP) 03 141,948 141,948 U Advanced Technology Development Advanced Technology Development 760,396 760,396 27 0603178N Medium and Large Unmanned Surface 464,042 U 04 464,042 Vehicles (USVs)

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# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item	Act 	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
29	0603216N	Aviation Survivability	04	7,618	11,919			11,919	U
30	0603239N	ISO Naval Construction Forces	04						U
31	0603251N	Aircraft Systems	04	790	1,473			1,473	U
32	0603254N	ASW Systems Development	04	6,877	7,172			7,172	U
33	0603261N	Tactical Airborne Reconnaissance	04	3,537	3,419			3,419	U
34	0603382N	Advanced Combat Systems Technology	04	38,674	57,947			57,947	U
35	0603502N	Surface and Shallow Water Mine Countermeasures	04	116,113	407,800			407,800	Ū
36	0603506N	Surface Ship Torpedo Defense	04	6,822	7,242			7,242	U
37	0603512N	Carrier Systems Development	04	5,388	4,997			4,997	U
38	0603525N	PILOT FISH	04	140,354	196,648			196,648	U
39	0603527N	RETRACT LARCH	04	28,653	11,980		22,000	33,980	U
40	0603536N	RETRACT JUNIPER	04	109,958	129,163			129,163	U
41	0603542N	Radiological Control	04	735	689			689	U
42	0603553N	Surface ASW	04	1,078	1,137			1,137	U
43	0603561N	Advanced Submarine System Development	04	103,267	115,717			115,717	U
44	0603562N	Submarine Tactical Warfare Systems	04	12,180	11,192			11,192	U
45	0603563N	Ship Concept Advanced Design	04	73,750	96,846			96,846	U
46	0603564N	Ship Preliminary Design & Feasibility Studies	04	12,839	22,534			22,534	U
47	0603570N	Advanced Nuclear Power Systems	04	256,137	181,652			181,652	U

### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Total Line Element FY 2021 OCO for Base and Enduring Total е No Number OCO (Base + OCO) c Item Act Base Requirements Costs -----\_\_\_\_ Aviation Survivability 29 0603216N 13,428 13,428 U 30 0603239N ISO Naval Construction Forces 04 2,350 2,350 U 31 0603251N Aircraft Systems 04 418 418 U 32 0603254N ASW Systems Development 15,719 15,719 U 04 33 0603261N Tactical Airborne Reconnaissance 04 3,411 3,411 U 34 0603382N Advanced Combat Systems Technology 04 70,218 70,218 U 35 0603502N Surface and Shallow Water Mine 04 52,358 52,358 U Countermeasures 36 0603506N Surface Ship Torpedo Defense 04 12,816 12,816 U 37 0603512N Carrier Systems Development 04 7,559 7,559 U 38 0603525N 358,757 358,757 U PILOT FISH 04 39 0603527N RETRACT LARCH 04 12,562 36,500 36,500 49,062 U 40 0603536N RETRACT JUNIPER 148,000 148,000 U 04 778 41 0603542N Radiological Control 04 778 U 42 0603553N Surface ASW 04 1,161 1,161 U 185,356 U 43 0603561N Advanced Submarine System 04 185,356 Development 44 0603562N Submarine Tactical Warfare Systems 10,528 10,528 U 45 0603563N Ship Concept Advanced Design 04 126,396 126,396 U Ship Preliminary Design & 70,270 U 46 0603564N 04 70,270 Feasibility Studies 47 0603570N Advanced Nuclear Power Systems 04 149,188 149,188 U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
48	0603573N	Advanced Surface Machinery Systems	04	26,272	87,408			87,408	U
49	0603576N	CHALK EAGLE	04	33,943	54,877			54,877	U
50	0603581N	Littoral Combat Ship (LCS)	04	36,864	16,934			16,934	U
51	0603582N	Combat System Integration	04	15,710	17,251			17,251	U
52	0603595N	Ohio Replacement	04	528,146	427,051			427,051	U
53	0603596N	LCS Mission Modules	04	99,728	108,505			108,505	U
54	0603597N	Automated Test and Analysis	04	36,563	42,653			42,653	U
55	0603599N	Frigate Development	04	119,821	59,007			59,007	U
56	0603609N	Conventional Munitions	04	8,942	9,988			9,988	U
57	0603635M	Marine Corps Ground Combat/Support System	04		51,997			51,997	Ū
58	0603654N	Joint Service Explosive Ordnance Development	04	60,316	33,478		14,178	47,656	U
59	0603713N	Ocean Engineering Technology Development	04	5,697	5,619			5,619	U
60	0603721N	Environmental Protection	04	19,629	20,564			20,564	U
61	0603724N	Navy Energy Program	04	31,726	58,014			58,014	U
62	0603725N	Facilities Improvement	04	5,177	3,440			3,440	U
63	0603734N	CHALK CORAL	04	254,023	307,392			307,392	U
64	0603739N	Navy Logistic Productivity	04	2,803	3,857			3,857	U
65	0603746N	RETRACT MAPLE	04	307,563	242,144			242,144	U
66	0603748N	LINK PLUMERIA	04	347,395	396,509			396,509	U

#### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

LINK PLUMERIA

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Total Line Element FY 2021 OCO for Base and Enduring Total е No Number Costs OCO (Base + OCO) c Item Act Base Requirements \_\_\_\_\_ \_\_\_\_ 48 0603573N Advanced Surface Machinery Systems 38,449 38,449 U 49 0603576N CHALK EAGLE 04 71,181 71,181 U 50 0603581N Littoral Combat Ship (LCS) 04 32,178 32,178 U 51 0603582N Combat System Integration 17,843 17,843 U 04 52 0603595N Ohio Replacement 04 317,196 317,196 U 53 0603596N LCS Mission Modules 04 67,875 67,875 U Automated Test and Analysis 54 0603597N 04 4,797 4,797 U 55 0603599N Frigate Development 04 82,309 82,309 U 56 0603609N Conventional Munitions 9,922 9,922 U 57 0603635M Marine Corps Ground Combat/Support 189,603 U 189,603 System 58 0603654N Joint Service Explosive Ordnance 04 43,084 14,461 14,461 57,545 U Development 59 0603713N Ocean Engineering Technology 04 6,346 6,346 U Development 60 0603721N Environmental Protection 04 20,601 20,601 U 23,422 23,422 U 61 0603724N Navy Energy Program 04 62 0603725N Facilities Improvement 04 4,664 4,664 U 63 0603734N CHALK CORAL 545,763 3,000 3,000 548,763 U 04 Navy Logistic Productivity 3,884 3,884 U 64 0603739N 04 65 0603746N RETRACT MAPLE 04 353,226 353,226 U 66 0603748N

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## Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
67	0603751N	RETRACT ELM	04	49,869	63,434			63,434	U
68	0603764M	LINK EVERGREEN	04		30,000			30,000	U
69	0603764N	LINK EVERGREEN	04		167,735			167,735	U
70	0603790N	NATO Research and Development	04	9,280	7,697			7,697	U
71	0603795N	Land Attack Technology	04	6,924	5,900		1,428	7,328	U
72	0603851M	Joint Non-Lethal Weapons Testing	04	26,695	28,466			28,466	U
73	0603860N	Joint Precision Approach and Landing Systems - Dem/Val	04	99,123	51,341			51,341	Ū
74	0603925N	Directed Energy and Electric Weapon Systems	04	138,988	135,919			135,919	U
75	0604014N	F/A -18 Infrared Search and Track (IRST)	04	104,505	112,416			112,416	U
76	0604027N	Digital Warfare Office	04	19,217	37,000			37,000	U
77	0604028N	Small and Medium Unmanned Undersea Vehicles	04	16,062	47,261			47,261	U
78	0604029N	Unmanned Undersea Vehicle Core Technologies	04	26,406	41,910			41,910	U
79	0604030N	Rapid Prototyping, Experimentation and Demonstration.	04	27,495	31,000			31,000	U
80	0604031N	Large Unmanned Undersea Vehicles	04	57,942	68,310			68,310	U
81	0604112N	Gerald R. Ford Class Nuclear Aircraft Carrier (CVN 78 - 80)	04	81,021	105,756			105,756	U
82	0604126N	Littoral Airborne MCM	04	14,052	20,248			20,248	U
83	0604127N	Surface Mine Countermeasures	04	14,764	18,735			18,735	U

### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Line Element FY 2021 OCO for Base and Enduring Total Total е No Number Costs OCO (Base + OCO) c Item Act Base Requirements 67 0603751N RETRACT ELM 04 86,730 86,730 U 68 0603764M LINK EVERGREEN 04 236,234 236,234 U 69 0603764N LINK EVERGREEN 04 U 70 0603790N NATO Research and Development 6,880 6,880 U 04 71 0603795N Land Attack Technology 04 10,578 1,457 1,457 12,035 U 72 0603851M Joint Non-Lethal Weapons Testing 04 28,435 28,435 U Joint Precision Approach and 73 0603860N 04 33,612 33,612 U Landing Systems - Dem/Val 74 0603925N Directed Energy and Electric Weapon 04 128,845 128,845 U F/A -18 Infrared Search and Track 75 0604014N 84,190 84,190 U 04 (IRST) Digital Warfare Office 76 0604027N 04 54,699 54,699 U 77 0604028N Small and Medium Unmanned Undersea 53,942 53,942 U Vehicles 78 0604029N Unmanned Undersea Vehicle Core 04 40,060 40,060 U Technologies 79 0604030N Rapid Prototyping, Experimentation 04 12,100 12,100 U and Demonstration. 80 0604031N Large Unmanned Undersea Vehicles 04 78,122 78,122 U 81 0604112N Gerald R. Ford Class Nuclear 107,895 107,895 U Aircraft Carrier (CVN 78 - 80) 82 0604126N Littoral Airborne MCM 04 17,366 17,366 U 83 0604127N Surface Mine Countermeasures 18,754 18,754 U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
84	0604272N	Tactical Air Directional Infrared Countermeasures (TADIRCM)	04	45,853	58,449			58,449	Ū
85	0604289M	Next Generation Logistics	04	5,890	19,420			19,420	U
86	0604292N	Future Vertical Lift (Maritime Strike)	04						U
87	0604320M	Rapid Technology Capability Prototype	04	6,986	4,558			4,558	U
88	0604454N	LX (R)	04	5,463	12,500			12,500	U
89	0604536N	Advanced Undersea Prototyping	04	108,482	187,187			187,187	U
90	0604636N	Counter Unmanned Aircraft Systems (C-UAS)	04		3,100			3,100	Ū
91	0604659N	Precision Strike Weapons Development Program	04	89,477	637,254			637,254	U
92	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	04	6,952	5,263			5,263	Ū
93	0604786N	Offensive Anti-Surface Warfare Weapon Development	04	141,383	115,419			115,419	U
94	0303354N	ASW Systems Development - MIP	04	8,889	9,991			9,991	U
95	0304240M	Advanced Tactical Unmanned Aircraft System	04	17,554	45,407			45,407	U
96	0304240N	Advanced Tactical Unmanned Aircraft System	04	9,300					U
97	0304270N	Electronic Warfare Development - MIR	04	466	609			609	U
	Advan	ced Component Development & Prototype	es	4,033,262	5,329,143		40,006	5,369,149	
98	0603208N	Training System Aircraft	05	14,345	15,514			15,514	U

## Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
84	0604272N	Tactical Air Directional Infrared Countermeasures (TADIRCM)	04	59,776				59,776	Ū
85	0604289M	Next Generation Logistics	04						U
86	0604292N	Future Vertical Lift (Maritime Strike)	04	5,097				5,097	Ū
87	0604320M	Rapid Technology Capability Prototype	04	3,664				3,664	Ū
88	0604454N	LX (R)	04	10,203				10,203	U
89	0604536N	Advanced Undersea Prototyping	04	115,858				115,858	U
90	0604636N	Counter Unmanned Aircraft Systems (C-UAS)	04	14,259				14,259	Ū
91	0604659N	Precision Strike Weapons Development Program	04	1,102,387				1,102,387	Ū
92	0604707N	Space and Electronic Warfare (SEW) Architecture/Engineering Support	04	7,657				7,657	U
93	0604786N	Offensive Anti-Surface Warfare Weapon Development	04	35,750				35,750	Ū
94	0303354N	ASW Systems Development - MIP	04	9,151				9,151	U
95	0304240M	Advanced Tactical Unmanned Aircraft System	04	22,589				22,589	Ū
96	0304240N	Advanced Tactical Unmanned Aircraft System	04						Ū
97	0304270N	Electronic Warfare Development - MIE	04	809				809	U
	Advan	ced Component Development & Prototype	es.	6,503,074		55,418	55,418	6,558,492	•
98	0603208N	Training System Aircraft	05	4,332				4,332	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act 	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
99	0604212N	Other Helo Development	05	23,307	38,835			38,835	U
100	0604214M	AV-8B Aircraft - Eng Dev	05	45,639	27,441			27,441	U
101	0604215N	Standards Development	05	3,624	3,642			3,642	U
102	0604216N	Multi-Mission Helicopter Upgrade Development	05	16,178	19,196			19,196	U
103	0604218N	Air/Ocean Equipment Engineering	05	15,212					U
104	0604221N	P-3 Modernization Program	05	2,074					U
105	0604230N	Warfare Support System	05	9,401	8,601			8,601	U
106	0604231N	Tactical Command System	05	53,110	73,920			73,920	U
107	0604234N	Advanced Hawkeye	05	205,612	226,596			226,596	U
108	0604245M	H-1 Upgrades	05	53,083	60,991			60,991	U
109	0604261N	Acoustic Search Sensors	05	41,395	47,013			47,013	U
110	0604262N	V-22A	05	131,363	191,235			191,235	U
111	0604264N	Air Crew Systems Development	05	30,005	19,172			19,172	U
112	0604269N	EA-18	05	235,963	123,637			123,637	U
113	0604270N	Electronic Warfare Development	05	86,719	114,349			114,349	U
114	0604273M	Executive Helo Development	05	237,300	176,211			176,211	U
115	0604274N	Next Generation Jammer (NGJ)	05	426,729	491,884			491,884	U
116	0604280N	Joint Tactical Radio System - Navy (JTRS-Navy)	05	3,178	190,689			190,689	U
117	0604282N	Next Generation Jammer (NGJ) Increment II	05	91,216	90,922			90,922	U

### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

Increment II

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Total Line Element FY 2021 OCO for Base and Enduring Total е No Number OCO (Base + OCO) c Item Act Base Requirements Costs ----\_\_\_\_ 99 0604212N Other Helo Development 05 18,133 18,133 U 100 0604214M AV-8B Aircraft - Eng Dev 05 20,054 20,054 U 101 0604215N Standards Development 05 4,237 4,237 U 102 0604216N Multi-Mission Helicopter Upgrade 27,340 27,340 U 05 Development Air/Ocean Equipment Engineering 103 0604218N 05 U 606 U 104 0604221N P-3 Modernization Program 05 606 Warfare Support System 9,065 U 105 0604230N 05 9,065 106 0604231N Tactical Command System 05 97,968 97,968 U 107 0604234N Advanced Hawkeye 05 309,373 309,373 U 108 0604245M 62,310 62,310 U H-1 Upgrades 05 Acoustic Search Sensors 109 0604261N 05 47,182 47,182 U 110 0604262N V-22A 05 132,624 132,624 U 111 0604264N Air Crew Systems Development 05 21,445 21,445 U 112 0604269N EA-18 05 106,134 106,134 U 113 0604270N 134,194 U Electronic Warfare Development 05 134,194 114 0604273M 99,321 99,321 U Executive Helo Development 05 115 0604274N Next Generation Jammer (NGJ) 477,680 U 05 477,680 116 0604280N Joint Tactical Radio System - Navy 232,818 U 05 232,818 (JTRS-Navy) 117 0604282N Next Generation Jammer (NGJ) 05 170,039 170,039 U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
118	0604307N	Surface Combatant Combat System Engineering	05	367,189	375,681			375,681	U
119	0604311N	LPD-17 Class Systems Integration	05	902	640			640	U
120	0604329N	Small Diameter Bomb (SDB)	05	84,029	50,096			50,096	U
121	0604366N	Standard Missile Improvements	05	199,499	195,296			195,296	U
122	0604373N	Airborne MCM	05	8,024	10,916			10,916	U
123	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	32,512	30,084			30,084	U
124	0604419N	Advanced Sensors Application Program (ASAP)	05						U
125	0604501N	Advanced Above Water Sensors	05	30,551	30,179			30,179	U
126	0604503N	SSN-688 and Trident Modernization	05	119,911	78,625			78,625	U
127	0604504N	Air Control	05	60,323	44,923			44,923	U
128	0604512N	Shipboard Aviation Systems	05	13,530	14,632			14,632	U
129	0604518N	Combat Information Center Conversion	n 05	18,626	16,094			16,094	U
130	0604522N	Air and Missile Defense Radar (AMDR) System	05	26,079	38,349			38,349	U
131	0604530N	Advanced Arresting Gear (AAG)	05	168,427	122,495			122,495	U
132	0604558N	New Design SSN	05	174,351	321,010			321,010	U
133	0604562N	Submarine Tactical Warfare System	05	77,529	62,426			62,426	U
134	0604567N	Ship Contract Design/ Live Fire T&E	05	69,337	46,809			46,809	U
135	0604574N	Navy Tactical Computer Resources	05	4,460	3,692			3,692	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 2021

	Program Element Number	Item	Act 	FY 2021 Base	FY 2021 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
118	0604307N	Surface Combatant Combat System Engineering	05	403,712				403,712	U
119	0604311N	LPD-17 Class Systems Integration	05	945				945	U
120	0604329N	Small Diameter Bomb (SDB)	05	62,488				62,488	U
121	0604366N	Standard Missile Improvements	05	386,225				386,225	U
122	0604373N	Airborne MCM	05	10,909				10,909	U
123	0604378N	Naval Integrated Fire Control - Counter Air Systems Engineering	05	44,548				44,548	U
124	0604419N	Advanced Sensors Application Program (ASAP)	05	13,673				13,673	U
125	0604501N	Advanced Above Water Sensors	05	87,809				87,809	U
126	0604503N	SSN-688 and Trident Modernization	05	93,097				93,097	U
127	0604504N	Air Control	05	38,863				38,863	U
128	0604512N	Shipboard Aviation Systems	05	9,593				9,593	U
129	0604518N	Combat Information Center Conversion	. 05	12,718				12,718	U
130	0604522N	Air and Missile Defense Radar (AMDR) System	05	78,319				78,319	U
131	0604530N	Advanced Arresting Gear (AAG)	05	65,834				65,834	U
132	0604558N	New Design SSN	05	259,443				259,443	U
133	0604562N	Submarine Tactical Warfare System	05	63,878				63,878	U
134	0604567N	Ship Contract Design/ Live Fire T&E	05	51,853				51,853	U
135	0604574N	Navy Tactical Computer Resources	05	3,853				3,853	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
136	0604601N	Mine Development	05	22,105	56,464			56,464	U
137	0604610N	Lightweight Torpedo Development	05	62,448	109,349			109,349	U
138	0604654N	Joint Service Explosive Ordnance Development	05	6,829	8,237			8,237	U
139	0604657M	USMC Ground Combat/Supporting Arms Systems - Eng Dev	05		20,085			20,085	U
140	0604703N	Personnel, Training, Simulation, and Human Factors	05	6,287	5,500			5,500	U
141	0604727N	Joint Standoff Weapon Systems	05	424	16,225			16,225	U
142	0604755N	Ship Self Defense (Detect & Control)	05	175,129	178,603		1,122	179,725	U
143	0604756N	Ship Self Defense (Engage: Hard Kill)	05	185,971	115,130			115,130	U
144	0604757N	Ship Self Defense (Engage: Soft Kill/EW)	05	124,769	95,282			95,282	U
145	0604761N	Intelligence Engineering	05	25,965	45,610			45,610	U
146	0604771N	Medical Development	05	36,761	33,181			33,181	U
147	0604777N	Navigation/ID System	05	99,650	45,755			45,755	U
148	0604800M	Joint Strike Fighter (JSF) - EMD	05	64,692	1,710			1,710	U
149	0604800N	Joint Strike Fighter (JSF) - EMD	05	63,535	1,490			1,490	U
150	0604850N	SSN(X)	05						U
151	0605013M	Information Technology Development	05	12,545	1,494			1,494	U
152	0605013N	Information Technology Development	05	233,521	268,547			268,547	U
153	0605024N	Anti-Tamper Technology Support	05	6,049	4,882			4,882	U

#### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

153 0605024N

FY 2021 OCO for Direct War Program FY 2021 FY 2021 FY 2021 Total Line Element FY 2021 OCO for Base and Enduring Total е No Number Costs OCO (Base + OCO) c Item Act Base Requirements -----\_\_\_\_ 136 0604601N Mine Development 05 92,607 92,607 U 137 0604610N Lightweight Torpedo Development 05 146,012 146,012 U 138 0604654N Joint Service Explosive Ordnance 05 8,383 8,383 U Development 139 0604657M USMC Ground Combat/Supporting Arms 05 33,784 33,784 U Systems - Eng Dev 140 0604703N Personnel, Training, Simulation, 05 8,599 8,599 U and Human Factors 73,744 U 141 0604727N Joint Standoff Weapon Systems 05 73,744 142 0604755N Ship Self Defense (Detect & Control) 05 157,490 1,144 1,144 158,634 U 143 0604756N Ship Self Defense (Engage: Hard 05 121,761 121,761 U Kill) Ship Self Defense (Engage: Soft 89,373 U 144 0604757N 05 89,373 Kill/EW) 145 0604761N Intelligence Engineering 15,716 15,716 U 05 146 0604771N Medical Development 05 2,120 2,120 U 147 0604777N Navigation/ID System 05 50,180 50,180 U 148 0604800M 561 561 U Joint Strike Fighter (JSF) - EMD 05 149 0604800N Joint Strike Fighter (JSF) - EMD 250 250 U 05 150 0604850N SSN(X) 1,000 1,000 U 05 151 0605013M Information Technology Development 974 974 U 05 356,173 U 152 0605013N Information Technology Development 05 356,173 Anti-Tamper Technology Support

7,810

05

UNCLASSIFIED

7,810 U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
154	0605212M	CH-53K RDTE	05	383,558	506,955			506,955	U
155	0605215N	Mission Planning	05	32,032	72,566			72,566	U
156	0605217N	Common Avionics	05	49,316	37,055			37,055	U
157	0605220N	Ship to Shore Connector (SSC)	05	1,425	19,909			19,909	U
158	0605327N	T-AO 205 Class	05	1,253	1,682			1,682	U
159	0605414N	Unmanned Carrier Aviation (UCA)	05	503,989	649,055			649,055	U
160	0605450M	Joint Air-to-Ground Missile (JAGM)	05	16,031	18,393			18,393	U
161	0605500N	Multi-mission Maritime Aircraft (MMA)	05	32,998	21,472			21,472	U
162	0605504N	Multi-Mission Maritime (MMA) Increment III	05	159,572	141,534			141,534	U
163	0605611M	Marine Corps Assault Vehicles System Development & Demonstration	05	64,311	50,137			50,137	U
164	0605813M	Joint Light Tactical Vehicle (JLTV) System Development & Demonstration	05		2,105			2,105	U
165	0204202N	DDG-1000	05	137,004	111,435			111,435	U
166	0303267N	Auctioned Spectrum Relocation Fund*	05	102,762					U
167	0303467N	SENSR Spectrum Pipeline SRF**	05	1,012					U
168	0303567N	Non-SENSR Spectrum Pipeline SRF***	05	2,000					U
169	0304785N	Tactical Cryptologic Systems	05	39,385	91,091			91,091	U
170	0306250M	Cyber Operations Technology Development	05	6,546	19,874			19,874	U
	Syste	em Development & Demonstration		5,840,606	6,112,602		1,122	6,113,724	

#### Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

						FY 2021
						OCO for
	Program				FY 2021	Direct War
9	Element			FY 2021	OCO for Base	and Endurir
	Number	Item	Act	Base	Requirements	Costs

	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
154	0605212M	CH-53K RDTE	05	406,406				406,406	U
155	0605215N	Mission Planning	05	86,134				86,134	U
156	0605217N	Common Avionics	05	54,540				54,540	U
157	0605220N	Ship to Shore Connector (SSC)	05	5,155				5,155	U
158	0605327N	T-AO 205 Class	05	5,148				5,148	U
159	0605414N	Unmanned Carrier Aviation (UCA)	05	266,970				266,970	U
160	0605450M	Joint Air-to-Ground Missile (JAGM)	05	12,713				12,713	U
161	0605500N	Multi-mission Maritime Aircraft (MMA)	05	24,424				24,424	U
162	0605504N	Multi-Mission Maritime (MMA) Increment III	05	182,870				182,870	Ū
163	0605611M	Marine Corps Assault Vehicles System Development & Demonstration	05	41,775				41,775	Ū
164	0605813M	Joint Light Tactical Vehicle (JLTV) System Development & Demonstration	05	2,541				2,541	Ū
165	0204202N	DDG-1000	05	208,448				208,448	U
166	0303267N	Auctioned Spectrum Relocation Fund	05						U
167	0303467N	SENSR Spectrum Pipeline SRF	05						U
168	0303567N	Non-SENSR Spectrum Pipeline SRF	05						U
169	0304785N	Tactical Cryptologic Systems	05	111,434				111,434	U
170	0306250M	Cyber Operations Technology Development	05	26,173				26,173	Ū
	Syste	m Development & Demonstration		6,263,883		1,144	1,144	6,265,027	

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
171	0604256N	Threat Simulator Development	06	91,921	62,678			62,678	U
172	0604258N	Target Systems Development	06	10,686	12,027			12,027	U
173	0604759N	Major T&E Investment	06	86,967	107,348			107,348	U
174	0605126N	Joint Theater Air and Missile Defense Organization	06	46					U
175	0605152N	Studies and Analysis Support - Navy	06	3,870	3,908			3,908	U
176	0605154N	Center for Naval Analyses	06	42,361	47,669			47,669	U
177	0605285N	Next Generation Fighter	06	4,981	7,100			7,100	U
178	0605502N	Small Business Innovative Research	06	433,656					U
179	0605804N	Technical Information Services	06	1,465	988			988	U
180	0605853N	Management, Technical & International Support	06	84,378	113,844			113,844	U
181	0605856N	Strategic Technical Support	06	4,068	3,742			3,742	U
182	0605861N	RDT&E Science and Technology Management	06	1,041					U
183	0605863N	RDT&E Ship and Aircraft Support	06	100,950	93,872			93,872	U
184	0605864N	Test and Evaluation Support	06	370,229	392,528	130,444		522,972	U
185	0605865N	Operational Test and Evaluation Capability	06	21,218	25,145			25,145	U
186	0605866N	Navy Space and Electronic Warfare (SEW) Support	06	16,032	12,652			12,652	U
187	0605867N	SEW Surveillance/Reconnaissance Support	06		8,402			8,402	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 2021 OCO for

						OCO for			
	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	s e c
 171	0604256N	Threat Simulator Development	06	22,075				22,075	U
172	0604258N	Target Systems Development	06	10,224				10,224	U
173	0604759N	Major T&E Investment	06	85,195				85,195	U
174	0605126N	Joint Theater Air and Missile Defense Organization	06						U
175	0605152N	Studies and Analysis Support - Navy	06	3,089				3,089	U
176	0605154N	Center for Naval Analyses	06	43,517				43,517	U
177	0605285N	Next Generation Fighter	06						U
178	0605502N	Small Business Innovative Research	06						U
179	0605804N	Technical Information Services	06	932				932	U
180	0605853N	Management, Technical & International Support	06	94,297				94,297	U
181	0605856N	Strategic Technical Support	06	3,813				3,813	U
182	0605861N	RDT&E Science and Technology Management	06						U
183	0605863N	RDT&E Ship and Aircraft Support	06	104,822				104,822	U
184	0605864N	Test and Evaluation Support	06	446,960				446,960	U
185	0605865N	Operational Test and Evaluation Capability	06	27,241				27,241	U
186	0605866N	Navy Space and Electronic Warfare (SEW) Support	06	15,787				15,787	U
187	0605867N	SEW Surveillance/Reconnaissance Support	06	8,559				8,559	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act 	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
188	0605873M	Marine Corps Program Wide Support	06	21,158	34,734			34,734	U
189	0605898N	Management HQ - R&D	06	40,165	39,673			39,673	U
190	0606355N	Warfare Innovation Management	06	40,722	28,750			28,750	U
191	0606942M	Assessments and Evaluations Cyber Vulnerabilities	06	6,731					U
192	0606942N	Assessments and Evaluations Cyber Vulnerabilities	06	42,285					U
193	0305327N	Insider Threat	06	1,682	2,645			2,645	U
194	0902498N	Management Headquarters (Departmental Support Activities)	06	1,568	1,460			1,460	U
195	0909980N	Judgment Fund Reimbursement	06	49					U
196	0909999N	Financing for Cancelled Account Adjustments	06	759					U
197	1206867N	SEW Surveillance/Reconnaissance Support	06	8,676					U
	Manag	rement Support		1,437,664	999,165	130,444		1,129,609	
199	0604227N	HARPOON Modifications	07	5,016	2,302			2,302	U
200	0604840M	F-35 C2D2	07	222,644	391,165			391,165	U
201	0604840N	F-35 C2D2	07	215,366	354,960			354,960	U
202	0607658N	Cooperative Engagement Capability (CEC)	07	124,413	127,924			127,924	U
203	0607700N	Deployable Joint Command and Control	07	2,817					U
204	0101221N	Strategic Sub & Weapons System Support	07	145,670	125,766			125,766	U

# Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

Progra Line Elemen No Number	t Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
188 060587	3M Marine Corps Program Wide Support	06	42,749				42,749	U
189 060589	8N Management HQ - R&D	06	41,094				41,094	U
190 060635	5N Warfare Innovation Management	06	37,022				37,022	U
191 060694	2M Assessments and Evaluations Cyber Vulnerabilities	06						U
192 060694	2N Assessments and Evaluations Cyber Vulnerabilities	06						U
193 030532	7N Insider Threat	06	2,310				2,310	U
194 090249	8N Management Headquarters (Departmental Support Activities)	06	1,536				1,536	U
195 090998	ON Judgment Fund Reimbursement	06						U
196 090999	9N Financing for Cancelled Account Adjustments	06						U
197 120686	7N SEW Surveillance/Reconnaissance Support	06						U
M	anagement Support		991,222				991,222	
199 060422	7N HARPOON Modifications	07	697				697	U
200 060484	OM F-35 C2D2	07	379,549				379,549	U
201 060484	ON F-35 C2D2	07	413,875				413,875	U
202 060765	8N Cooperative Engagement Capability (CEC)	07	143,667				143,667	U
203 060770	ON Deployable Joint Command and Control	. 07						U
204 010122	<pre>1N Strategic Sub &amp; Weapons System     Support</pre>	07	173,056				173,056	U

## Department of the Navy FY 2021President's Budget Exhibit R-1 FY 2021 President's Budget Total Obligational Authority (Dollars in Thousands)

Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
205	0101224N	SSBN Security Technology Program	07	40,804	43,354			43,354	U
206	0101226N	Submarine Acoustic Warfare Development	07	11,102	6,815			6,815	U
207	0101402N	Navy Strategic Communications	07	37,184	28,674			28,674	U
208	0204136N	F/A-18 Squadrons	07	199,881	187,911			187,911	U
209	0204163N	Fleet Telecommunications (Tactical)	07	1,613					U
210	0204228N	Surface Support	07	9,328	34,602			34,602	U
211	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	233,913	273,036			273,036	U
212	0204311N	Integrated Surveillance System	07	68,326	103,382			103,382	U
213	0204313N	Ship-Towed Array Surveillance Systems	07	15,250	14,449			14,449	U
214	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	4,840	6,931			6,931	U
215	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	07	43,184	28,891			28,891	U
216	0204571N	Consolidated Training Systems Development	07	101,451	128,673			128,673	U
217	0204574N	Cryptologic Direct Support	07	4,244					U
218	0204575N	Electronic Warfare (EW) Readiness Support	07	64,264	71,143			71,143	U
219	0205601N	HARM Improvement	07	116,881	132,371			132,371	U
220	0205604N	Tactical Data Links	07	96,542					U

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Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 202	1
OCO fo	r
Direct	War

	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
205	0101224N	SSBN Security Technology Program	07	45,970				45,970	U
206	0101226N	Submarine Acoustic Warfare Development	07	69,190				69,190	U
207	0101402N	Navy Strategic Communications	07	42,277				42,277	U
208	0204136N	F/A-18 Squadrons	07	171,030				171,030	U
209	0204163N	Fleet Telecommunications (Tactical)	07						U
210	0204228N	Surface Support	07	33,482				33,482	U
211	0204229N	Tomahawk and Tomahawk Mission Planning Center (TMPC)	07	200,308				200,308	Ū
212	0204311N	Integrated Surveillance System	07	102,975				102,975	U
213	0204313N	Ship-Towed Array Surveillance Systems	07	10,873				10,873	U
214	0204413N	Amphibious Tactical Support Units (Displacement Craft)	07	1,713				1,713	U
215	0204460M	Ground/Air Task Oriented Radar (G/ATOR)	07	22,205				22,205	U
216	0204571N	Consolidated Training Systems Development	07	83,956				83,956	U
217	0204574N	Cryptologic Direct Support	07						U
218	0204575N	Electronic Warfare (EW) Readiness Support	07	56,791				56,791	U
219	0205601N	HARM Improvement	07	146,166				146,166	U
220	0205604N	Tactical Data Links	07						U

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Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act 	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
221	0205620N	Surface ASW Combat System Integration	07	25,478	29,572			29,572	U
222	0205632N	MK-48 ADCAP	07	66,934	72,265			72,265	U
223	0205633N	Aviation Improvements	07	130,986	125,461			125,461	U
224	0205675N	Operational Nuclear Power Systems	07	117,028	106,192			106,192	U
225	0206313M	Marine Corps Communications Systems	07	180,758	156,307		15,000	171,307	U
226	0206335M	Common Aviation Command and Control System (CAC2S)	07	4,628	4,489			4,489	U
227	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	95,319	51,788			51,788	U
228	0206624M	Marine Corps Combat Services Support	07	27,642	44,528			44,528	U
229	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	37,821	27,886			27,886	U
230	0206629M	Amphibious Assault Vehicle	07	18,757	5,476			5,476	U
231	0207161N	Tactical AIM Missiles	07	36,444	19,488			19,488	U
232	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	27,698	34,191			34,191	U
236	0303109N	Satellite Communications (SPACE)	07		34,344			34,344	U
237	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07	23,322	22,873			22,873	U
238	0303140N	Information Systems Security Program	n 07	43,348	44,853			44,853	U
239	0305192N	Military Intelligence Program (MIP) Activities	07	6,081	8,913			8,913	U
240	0305204N	Tactical Unmanned Aerial Vehicles	07	8,529	9,451			9,451	U

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Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	FY 2021 OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
221	0205620N	Surface ASW Combat System Integration	07	29,348				29,348	U
222	0205632N	MK-48 ADCAP	07	110,349				110,349	U
223	0205633N	Aviation Improvements	07	133,953				133,953	U
224	0205675N	Operational Nuclear Power Systems	07	110,313				110,313	U
225	0206313M	Marine Corps Communications Systems	07	207,662				207,662	U
226	0206335M	Common Aviation Command and Control System (CAC2S)	07	4,406				4,406	U
227	0206623M	Marine Corps Ground Combat/ Supporting Arms Systems	07	61,381				61,381	Ū
228	0206624M	Marine Corps Combat Services Support	07	10,421				10,421	U
229	0206625M	USMC Intelligence/Electronic Warfare Systems (MIP)	07	29,977		3,000	3,000	32,977	U
230	0206629M	Amphibious Assault Vehicle	07	6,469				6,469	U
231	0207161N	Tactical AIM Missiles	07	5,859				5,859	U
232	0207163N	Advanced Medium Range Air-to-Air Missile (AMRAAM)	07	44,323				44,323	U
236	0303109N	Satellite Communications (SPACE)	07	41,978				41,978	U
237	0303138N	Consolidated Afloat Network Enterprise Services (CANES)	07	29,684				29,684	U
238	0303140N	Information Systems Security Program	07	39,094				39,094	U
239	0305192N	Military Intelligence Program (MIP) Activities	07	6,154				6,154	U
240	0305204N	Tactical Unmanned Aerial Vehicles	07	7,108				7,108	U

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Appropriation: 1319N Research, Development, Test & Eval, Navy

	Program Element Number	Item 	Act	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
241	0305205N	UAS Integration and Interoperability	07	24,235	40,446			40,446	U
242	0305208M	Distributed Common Ground/Surface Systems	07	7,610	22,042			22,042	U
243	0305208N	Distributed Common Ground/Surface Systems	07	45,338					U
244	0305220N	MQ-4C Triton	07	13,395	11,784			11,784	U
245	0305231N	MQ-8 UAV	07	23,144	29,618			29,618	U
246	0305232M	RQ-11 UAV	07	524	509			509	U
247	0305234N	Small (Level 0) Tactical UAS (STUASL0)	07	5,265	9,410			9,410	U
248	0305239M	RQ-21A	07	6,000	10,914			10,914	U
249	0305241N	Multi-Intelligence Sensor Development	07	80,232	70,612			70,612	U
250	0305242M	Unmanned Aerial Systems (UAS) Payloads (MIP)	07	5,956	10,004			10,004	Ū
251	0305251N	Cyberspace Operations Forces and Force Support	07						Ū
252	0305421N	RQ-4 Modernization	07	218,366	185,446			185,446	U
253	0307577N	Intelligence Mission Data (IMD)	07						U
254	0308601N	Modeling and Simulation Support	07	6,824	12,119			12,119	U
255	0702207N	Depot Maintenance (Non-IF)	07	36,961	48,182			48,182	U
256	0708730N	Maritime Technology (MARITECH)	07	26,294	26,779			26,779	U

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Appropriation: 1319N Research, Development, Test & Eval, Navy

FY 2021 OCO for

	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e c
241	0305205N	UAS Integration and Interoperability		62,098				62,098	_ TT
211	03032031	oas integration and interoperability	07	02,090				02,090	U
242	0305208M	Distributed Common Ground/Surface Systems	07	21,500				21,500	U
243	0305208N	Distributed Common Ground/Surface Systems	07						U
244	0305220N	MQ-4C Triton	07	11,120				11,120	U
245	0305231N	MQ-8 UAV	07	28,968				28,968	U
246	0305232M	RQ-11 UAV	07	537				537	U
247	0305234N	Small (Level 0) Tactical UAS (STUASLO)	07	8,773				8,773	U
248	0305239M	RQ-21A	07	10,853				10,853	U
249	0305241N	Multi-Intelligence Sensor Development	07	60,413				60,413	U
250	0305242M	Unmanned Aerial Systems (UAS) Payloads (MIP)	07	5,000				5,000	U
251	0305251N	Cyberspace Operations Forces and Force Support	07	34,967				34,967	U
252	0305421N	RQ-4 Modernization	07	178,799				178,799	U
253	0307577N	Intelligence Mission Data (IMD)	07	2,120				2,120	U
254	0308601N	Modeling and Simulation Support	07	8,683				8,683	U
255	0702207N	Depot Maintenance (Non-IF)	07	45,168				45,168	U
256	0708730N	Maritime Technology (MARITECH)	07	6,697				6,697	U

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	Program Element Number	Item 	Act 	FY 2019 (Base + OCO)	FY 2020 Base Enacted	FY 2020 Emergency	FY 2020 OCO Enacted	FY 2020 Total Enacted (Base+Emerg+ OCO)	
257	1203109N	Satellite Communications (SPACE)	07	32,059	15,868			15,868	U
9999	999999999	Classified Programs		1,783,585	1,742,227		108,282	1,850,509	U
	Opera	tional Systems Development		4,931,294	5,096,386		123,282	5,219,668	
258	0608013N	Risk management Information - Software Pilot Program	08						U
259	0608231N	Maritime Tactical Command and Control (MTC2) - Software Pilot Program	08						U
	Softw	rare and Digital Technology Pilot Pr	rogram						
Tota	l Research,	Development, Test & Eval, Navy		18,738,363	 20,155,115	130,444	 164,410	 20,449,969	

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FY 2021

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Line No	Program Element Number	Item	Act	FY 2021 Base	FY 2021 OCO for Base Requirements	OCO for Direct War and Enduring Costs	FY 2021 Total OCO	FY 2021 Total (Base + OCO)	S e
257	1203109N	Satellite Communications (SPACE)	07	70,056				70,056	Ū
9999	9999999999	Classified Programs		1,795,032				1,795,032	U
	Opera	tional Systems Development		5,327,043		3,000	3,000	5,330,043	
258	0608013N	Risk management Information - Software Pilot Program	08	14,300				14,300	Ū
259	0608231N	Maritime Tactical Command and Control (MTC2) - Software Pilot Program	08	10,868				10,868	U
	Softw	vare and Digital Technology Pilot Pr	rogram	25,168				25,168	-
Tota	l Research,	Development, Test & Eval, Navy		 21,427,048		 59,562	 59,562	21,486,610	-

<sup>\*</sup>Funding in this Program Element was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Advanced Wireless Services 3 (AWS-3) auction and is associated with the reallocation or sharing of the 1755-1780 MHz and 1695-1710 MHz bands. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

<sup>\*\*</sup>Funding in this Program Element was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the Joint Spectrum Efficient National Surveillance Radar (SENSR) Pipeline Plan to determine the feasibility and impacts of the proposed spectrum reallocation of the 1300-1350 MHz band. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).

<sup>\*\*\*</sup>Funding in this Program Element was transferred during the year of execution from the Spectrum Relocation Fund (SRF) in support of the proposed reallocation of the 1300-1350 MHz band and adjacent bands. Funds in this Program Element are to be used for activities and costs associated with the study of systems or operations not included in the Joint Spectrum Efficient National Surveillance Radar (SENSR) Pipeline Plan. The SRF is administered by the Office of Management and Budget (OMB), which approves SRF transfers to federal agencies on an annual basis in consultation with the National Telecommunications and Information Administration (NTIA).