

## REPORTING ON MIDDLE-TIER ACQUISITION AND RAPID PROTOTYPING PROGRAMS

As stated in the joint explanatory statement accompanying the Department of Defense Appropriations Act, 2021 (Public Law 116–260), the spectrum of programs using rapid development, rapid prototyping, rapid acquisition, accelerated acquisition, and middle-tier acquisition (“section 804”) authorities range from small programs that have already deployed prototypes to programs that, by virtue of their scope and cost, would otherwise be subject to reporting requirements and acquisition regulations applicable to traditional major defense acquisition category I programs. The Department of Defense’s continued use of such acquisition authorities is noted. However, the lack of standard acquisition information provided to the congressional defense committees for such programs with the budget request, to include independent cost estimates, technology and manufacturing readiness assessments, and test and evaluation master plans, is concerning. In addition, it is concerning that the Services’ growing trend toward procuring de facto end-items via prototyping acquisitions may limit the Services’ ability to successfully manage their acquisition programs in the long term by eliminating the complete understanding of full program costs up front, unnecessarily narrowing the industrial base early in the acquisition process, and eliminating opportunities for future innovation by reducing competition over the life of the acquisition. Further, it is concerning that budgeting for these de facto end-items incrementally with research and development appropriations instead of fully funding them with procurement appropriations obfuscates costs and limits transparency and visibility into Services’ procurement efforts.

It is noted that the Department did not, with submission of the fiscal year 2022 President’s budget request, comply with direction contained in section 8058 of the Department of Defense Appropriations Act, 2021 (Public Law 116–260), which was intended to provide more insight into the use of legislative authorities and research,

development, test and evaluation funds for these purposes. This direction is repeated for fiscal year 2022. The Under Secretaries of Defense for Research and Engineering and Acquisition and Sustainment, in coordination with the Service acquisition executives for the Army, Navy, and Air Force, are directed to provide to the congressional defense committees with submission of the fiscal year 2023 President's budget request a complete list of approved acquisition programs, and programs pending approval in fiscal year 2023, utilizing prototyping or accelerated acquisition authorities, along with the rationale for each selected acquisition strategy, as well as a cost estimate and contracting strategy for each such program. Further, the Under Secretary of Defense (Comptroller) and the respective Financial Manager and Comptrollers for the Army, Navy, and Air Force, are directed to certify full funding of the acquisition strategies for each of these programs in the fiscal year 2023 President's budget request, including their test strategies. Finally, the Director of Operational Test and Evaluation, is directed to certify to the congressional defense committees the appropriateness of the Services' planned test strategies for such programs, to include a risk assessment. To the extent that the respective Service acquisition executives, Service Financial Manager and Comptrollers, and Director of Operational Test and Evaluation, provide the information requested above with submission of the fiscal year 2022 President's budget, any variations therefrom should be included with the fiscal year 2023 submission. In addition, the Services' Financial Manager and Comptrollers are directed to identify the full costs for prototyping units by individual item in the research, development, test and evaluation budget exhibits for the budget year as well as the future years defense program.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, ARMY

The agreement provides \$14,539,417,000 for Research, Development, Test and Evaluation, Army, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT (116A-U)

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL	
RESEARCH, DEVELOPMENT, TEST & EVALUATION, ARMY			
BASIC RESEARCH			
1	DEFENSE RESEARCH SCIENCES.....	297,241 370,241	
2	UNIVERSITY RESEARCH INITIATIVES.....	66,981 91,981	
3	UNIVERSITY AND INDUSTRY RESEARCH CENTERS.....	94,003 127,253	
4	CYBER COLLABORATIVE RESEARCH ALLIANCE.....	5,067 5,067	
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING BASIC RESEARCH			
5	RESEARCH.....	10,183 15,183	
TOTAL, BASIC RESEARCH.....			473,475 609,725
APPLIED RESEARCH			
6	BIOMEDICAL TECHNOLOGY.....	11,925 11,925	
7	COUNTER IMPROVISED-THREAT ADVANCED STUDIES.....	1,976 1,976	
8	LETHALITY TECHNOLOGY.....	64,126 91,626	
9	ARMY APPLIED RESEARCH.....	28,654 28,654	
10	SOLDIER LETHALITY TECHNOLOGY.....	105,168 205,168	
11	GROUND TECHNOLOGY.....	56,400 216,550	
12	NEXT GENERATION COMBAT VEHICLE TECHNOLOGY.....	172,166 245,966	
13	NETWORK C3I TECHNOLOGY.....	84,606 164,906	
14	LONG RANGE PRECISION FIRES TECHNOLOGY.....	64,285 93,785	
15	FUTURE VERTICAL LIFT TECHNOLOGY.....	91,411 133,411	
16	AIR AND MISSILE DEFENSE TECHNOLOGY.....	19,316 93,566	
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING TECHNOLOGIES			
17	TECHNOLOGIES.....	15,034 15,034	
18	ALL DOMAIN CONVERGENCE APPLIED RESEARCH.....	25,967 25,967	
19	C3I APPLIED RESEARCH.....	12,406 12,406	
20	AIR PLATFORM APPLIED RESEARCH.....	6,597 6,597	
21	SOLDIER APPLIED RESEARCH.....	11,064 11,064	
22	C3I APPLIED CYBER.....	12,123 12,123	
23	BIOTECHNOLOGY FOR MATERIALS - APPLIED RESEARCH.....	20,643 20,643	
24	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY.....	18,701 18,701	
25	MEDICAL TECHNOLOGY.....	91,720 121,187	
TOTAL, APPLIED RESEARCH.....			914,288 1,531,255

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
26	ADVANCED TECHNOLOGY DEVELOPMENT MEDICAL ADVANCED TECHNOLOGY.....	43,804 137,804
27	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY..	14,273 14,273
28	ARMY AGILE INNOVATION AND DEMONSTRATION.....	22,231 22,231
29	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING ADVANCED TECHNOLOGIES.....	909 909
30	ALL DOMAIN CONVERGENCE ADVANCED TECHNOLOGY.....	17,743 17,743
31	C3I ADVANCED TECHNOLOGY.....	3,151 3,151
32	AIR PLATFORM ADVANCED TECHNOLOGY.....	754 754
33	SOLDIER ADVANCED TECHNOLOGY.....	890 890
34	MEDICAL DEVELOPMENT.....	26,521 26,521
35	LETHALITY ADVANCED TECHNOLOGY.....	8,066 8,066
36	ARMY ADVANCED TECHNOLOGY DEVELOPMENT.....	76,815 76,815
37	SOLDIER LETHALITY ADVANCED TECHNOLOGY.....	107,966 152,466
38	GROUND ADVANCED TECHNOLOGY.....	23,403 280,503
39	COUNTER IMPROVISED-THREAT SIMULATION.....	24,747 24,747
40	BIOTECHNOLOGY FOR MATERIALS - ADVANCED RESEARCH.....	53,736 53,736
41	C3I CYBER ADVANCED DEVELOPMENT.....	31,426 61,426
42	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM.....	189,123 229,123
43	NEXT GENERATION COMBAT VEHICLE ADVANCED TECHNOLOGY....	164,951 300,201
44	NETWORK C3I ADVANCED TECHNOLOGY.....	155,867 211,367
45	LONG RANGE PRECISION FIRES ADVANCED TECHNOLOGY.....	93,909 141,909
46	FUTURE VERTICAL LIFT ADVANCED TECHNOLOGY.....	179,677 262,177
47	AIR AND MISSILE DEFENSE ADVANCED TECHNOLOGY.....	48,826 145,826
48	HUMANITARIAN DEMINING.....	8,649 19,000
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT.....	1,297,437 2,191,638
49	ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES ARMY MISSILE DEFENSE SYSTEMS INTEGRATION.....	11,702 56,702
50	ARMY SPACE SYSTEMS INTEGRATION.....	18,755 25,755
51	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING.....	--- 15,000
52	LANDMINE WARFARE AND BARRIER - ADV DEV.....	50,314 46,687
53	TANK AND MEDIUM CALIBER AMMUNITION.....	79,873 73,963
54	ARMORED SYSTEM MODERNIZATION - ADV DEV.....	170,590 164,340
55	SOLDIER SUPPORT AND SURVIVABILITY.....	2,897 2,897
56	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV.....	113,365 113,365

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
57 NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT.....	18,000	62,820
58 ENVIRONMENTAL QUALITY TECHNOLOGY - DEM/VAL.....	11,921	22,921
59 NATO RESEARCH AND DEVELOPMENT.....	3,777	3,777
60 AVIATION - ADV DEV.....	1,125,641	1,178,460
61 LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV.....	7,055	11,055
62 MEDICAL SYSTEMS - ADV DEV.....	22,071	37,071
63 SOLDIER SYSTEMS - ADVANCED DEVELOPMENT.....	17,459	25,959
64 ROBOTICS DEVELOPMENT.....	87,198	80,712
65 EXPANDED MISSION AREA MISSILE (EMAM).....	50,674	27,872
67 LOW EARTH ORBIT (LEO) SATELLITE CAPABILITY.....	19,638	19,638
68 MULTI-DOMAIN SENSING SYSTEM (MDSS) ADV DEV.....	50,548	50,548
69 TACTICAL INTEL TARGETING ACCESS NODE (TITAN) ADV DEV..	28,347	28,347
70 ANALYSIS OF ALTERNATIVES.....	10,091	10,091
71 SMALL UNMANNED AERIAL VEHICLE (SUAV) (6.4).....	926	926
72 FUTURE TACTICAL UNMANNED AIRCRAFT SYSTEM (FTUAS).....	69,697	76,349
73 LOWER TIER AIR MISSILE DEFENSE (LTAMD) SENSOR.....	327,690	297,629
74 TECHNOLOGY MATURATION INITIATIVES.....	270,124	132,561
75 MANEUVER - SHORT RANGE AIR DEFENSE (M-SHORAD).....	39,376	39,376
76 ARMY ADVANCED COMPONENT DEVELOPMENT & PROTOTYPING.....	189,483	189,483
77 ASSURED POSITIONING, NAVIGATION AND TIMING (PNT).....	96,679	84,795
78 SYNTHETIC TRAINING ENVIRONMENT REFINEMENT AND PROTOTYPING.....	194,195	206,335
79 COUNTER IMPROVISED-THREAT DEMONSTRATION, PROTOTYPE DEVELOPMENT, AND TESTING.....	13,379	13,379
80 HYPERSONICS.....	300,928	315,448
81 FUTURE INTERCEPTOR.....	7,895	6,895
82 COUNTER - SMALL UNMANNED AIRCRAFT SYSTEMS ADVANCED DEVELOPMENT.....	19,148	19,148
83 UNIFIED NETWORK TRANSPORT.....	35,409	35,409
84 MOBILE MEDIUM RANGE MISSILE.....	286,457	286,457
85 INTEGRATED BASE DEFENSE (BUDGET ACTIVITY 4).....	2,040	2,040
86 CYBERSPACE OPERATIONS FORCES AND FORCE SUPPORT.....	52,988	55,988
TOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES..	3,806,330	3,820,198

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
89 SYSTEM DEVELOPMENT & DEMONSTRATION AIRCRAFT AVIONICS.....	6,654	6,654
90 ELECTRONIC WARFARE DEVELOPMENT.....	30,840	30,840
91 INFANTRY SUPPORT WEAPONS.....	67,873	79,339
92 MEDIUM TACTICAL VEHICLES.....	11,374	9,524
93 JAVELIN.....	7,094	7,094
94 FAMILY OF HEAVY TACTICAL VEHICLES.....	31,602	28,445
95 AIR TRAFFIC CONTROL.....	4,405	4,405
96 LIGHT TACTICAL WHEELED VEHICLES.....	2,055	2,055
97 ARMORED SYSTEMS MODERNIZATION (ASM) - ENG DEV.....	137,256	122,778
98 NIGHT VISION SYSTEMS - ENG/DEV.....	62,690	43,417
99 COMBAT FEEDING, CLOTHING, AND EQUIPMENT.....	1,658	1,658
100 NON-SYSTEM TRAINING DEVICES - ENG/DEV.....	26,540	26,540
AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - 101 ENG/DEV.....	59,518	59,518
102 CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT.....	22,331	22,331
103 AUTOMATIC TEST EQUIPMENT DEVELOPMENT.....	8,807	8,807
104 DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENG/DEV..	7,453	12,453
107 BRIGADE ANALYSIS, INTEGRATION AND EVALUATION.....	21,534	21,534
108 WEAPONS AND MUNITIONS - ENG/DEV.....	309,778	297,214
109 LOGISTICS AND ENGINEER EQUIPMENT - ENG/DEV.....	59,261	54,661
110 COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - ENG/DEV....	20,121	20,121
111 MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT.	44,424	44,424
112 LANDMINE WARFARE/BARRIER - ENG/DEV.....	14,137	29,137
113 ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE...	162,704	155,217
114 RADAR DEVELOPMENT.....	127,919	122,607
115 GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBs).....	17,623	15,979
117 SOLDIER SYSTEMS - WARRIOR DEM/VAL.....	6,454	6,454
118 SUITE OF SURVIVABILITY ENHANCEMENT SYSTEMS -EMD.....	106,354	96,132
119 ARTILLERY SYSTEMS - EMD.....	---	25,000
120 INFORMATION TECHNOLOGY DEVELOPMENT.....	122,168	129,515
121 INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (IPPS-A).....	76,936	67,701
122 ARMORED MULTI-PURPOSE VEHICLE (AMPV).....	35,560	35,560
124 JOINT TACTICAL NETWORK CENTER (JTNC).....	16,364	16,364
125 JOINT TACTICAL NETWORK (JTN).....	28,954	28,954
128 COMMON INFRARED COUNTERMEASURES (CIRCM).....	16,630	16,630

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
130 NUCLEAR BIOLOGICAL CHEMICAL RECONNAISSANCE VEHICLE....	7,618	7,618
131 DEFENSIVE CYBER TOOL DEVELOPMENT.....	18,892	18,892
132 TACTICAL NETWORK RADIO SYSTEMS (LOW-TIER).....	28,849	28,849
133 CONTRACT WRITING SYSTEM.....	22,960	20,960
135 AIRCRAFT SURVIVABILITY DEVELOPMENT.....	65,603	61,768
136 INDIRECT FIRE PROTECTION CAPABILITY INC 2 - BLOCK 1...	233,512	182,268
137 GROUND ROBOTICS.....	18,241	16,360
138 EMERGING TECHNOLOGY INITIATIVES.....	254,945	227,303
139 BIOMETRICS ENABLING CAPABILITY (BEC).....	4,326	4,326
140 NEXT GENERATION LOAD DEVICE - MEDIUM.....	15,616	15,397
141 MEDICAL PRODUCTS AND SUPPORT SYSTEMS DEVELOPMENT.....	962	962
142 TACTICAL INTEL TARGETING ACCESS NODE (TITAN) EMD.....	54,972	54,972
143 ARMY SYSTEM DEVELOPMENT & DEMONSTRATION.....	122,175	122,175
144 SMALL UNMANNED AERIAL VEHICLE (SUAV) (6.5).....	2,275	2,275
145 MULTI-DOMAIN INTELLIGENCE.....	9,313	9,313
146 SID CAPABILITY DEVELOPMENT.....	22,713	22,713
147 PRECISION STRIKE MISSILE (PRSM).....	188,452	188,452
148 HYPERSONICS EMD.....	111,473	111,473
149 ACCESSIONS INFORMATION ENVIRONMENT (AIE).....	18,790	16,790
150 JOINT AIR-TO-GROUND MISSILE (JAGM).....	2,134	2,134
151 ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD).....	157,873	159,873
152 COUNTER - SMALL UNMANNED AIRCRAFT SYSTEMS SYS DEV & DEMONSTRATION.....	33,386	33,386
153 MANNED GROUND VEHICLE.....	225,106	202,320
154 NATIONAL CAPABILITIES INTEGRATION (MIP).....	14,454	13,454
155 JOINT LIGHT TACTICAL VEHICLE ENG AND MANUFACTURING DEVELOPMENT.....	2,564	2,564
156 AVIATION GROUND SUPPORT EQUIPMENT.....	1,201	1,201
157 TROJAN - RH12.....	3,362	3,362
161 ELECTRONIC WARFARE DEVELOPMENT.....	75,520	75,520
TOTAL, ENGINEERING & MANUFACTURING DEVELOPMENT.....	3,392,358	3,255,742

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
MANAGEMENT SUPPORT		
162 THREAT SIMULATOR DEVELOPMENT.....	18,439	61,439
163 TARGET SYSTEMS DEVELOPMENT.....	17,404	42,404
164 MAJOR T&E INVESTMENT.....	68,139	93,739
165 RAND ARROYO CENTER.....	33,126	33,126
166 ARMY KWAJALEIN ATOLL.....	240,877	240,877
167 CONCEPTS EXPERIMENTATION PROGRAM.....	79,710	79,710
169 ARMY TEST RANGES AND FACILITIES.....	354,227	367,227
170 ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS.....	49,253	59,253
171 SURVIVABILITY/LETHALITY ANALYSIS.....	36,389	36,389
172 AIRCRAFT CERTIFICATION.....	2,489	2,489
173 METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES.....	6,689	6,689
174 MATERIEL SYSTEMS ANALYSIS.....	21,558	21,558
175 EXPLOITATION OF FOREIGN ITEMS.....	13,631	13,631
176 SUPPORT OF OPERATIONAL TESTING.....	55,122	55,122
177 ARMY EVALUATION CENTER.....	65,854	65,854
ARMY MODELING AND SIMULATION X-CMD COLLABORATION AND 178 INTEG.....	2,633	2,633
179 PROGRAMWIDE ACTIVITIES.....	96,589	96,589
180 TECHNICAL INFORMATION ACTIVITIES.....	26,808	32,008
181 MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY...	43,042	63,042
182 ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT.....	1,789	1,789
183 ARMY DIRECT REPORT HEADQUARTERS - R&D - MHA.....	52,108	49,108
185 RONALD REAGAN BALLISTIC MISSILE DEFENSE TEST SITE.....	80,952	80,952
186 COUNTERINTEL AND HUMAN INTEL MODERNIZATION.....	5,363	5,363
187 MEDICAL PROGRAM-WIDE ACTIVITIES.....	39,041	39,041
188 ASSESSMENTS AND EVALUATIONS CYBER VULNERABILITIES.....	5,466	5,466
TOTAL, RDT&E MANAGEMENT SUPPORT.....	1,416,698	1,555,498

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
OPERATIONAL SYSTEMS DEVELOPMENT		
190 MLRS PRODUCT IMPROVEMENT PROGRAM.....	12,314	12,314
191 ANTI-TAMPER TECHNOLOGY SUPPORT.....	8,868	8,868
192 WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS....	22,828	35,828
194 BLACKHAWK PRODUCT IMPROVEMENT PROGRAM.....	4,773	14,773
195 CHINOOK PRODUCT IMPROVEMENT PROGRAM.....	52,372	67,872
196 IMPROVED TURBINE ENGINE PROGRAM.....	275,024	260,024
AVIATION ROCKET SYSTEM PRODUCT IMPROVEMENT AND		
197 DEVELOPMENT.....	12,417	12,417
198 UNMANNED AIRCRAFT SYSTEM UNIVERSAL PRODUCTS.....	4,594	4,594
199 APACHE FUTURE DEVELOPMENT.....	10,067	10,067
200 AN/TPQ-53 COUNTERFIRE TARGET ACQUISITION RADAR SYSTEM.	56,681	47,752
201 INTEL CYBER DEVELOPMENT.....	3,611	3,611
202 ARMY OPERATIONAL SYSTEMS DEVELOPMENT.....	28,029	28,029
203 ELECTRONIC WARFARE DEVELOPMENT.....	5,673	5,673
204 FAMILY OF BIOMETRICS.....	1,178	1,178
205 PATRIOT PRODUCT IMPROVEMENT.....	125,932	125,932
206 JOINT AUTOMATED DEEP OPERATION COORDINATION SYSTEM....	25,547	25,547
207 COMBAT VEHICLE IMPROVEMENT PROGRAMS.....	211,523	280,130
208 155MM SELF-PROPELLED HOWITZER IMPROVEMENTS.....	213,281	175,155
209 AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS...	---	10,000
210 AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM.....	132	132
211 DIGITIZATION.....	3,936	3,936
212 MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM.....	127	127
213 OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS.....	10,265	10,265
ENVIRONMENTAL QUALITY TECHNOLOGY - OPERATIONAL SYSTEM		
214 DEV.....	262	262
215 LOWER TIER AIR AND MISSILE DEFENSE (AMD) SYSTEM.....	182	---
216 GUIDED MULTIPLE-LAUNCH ROCKET SYSTEM (GMLRS).....	63,937	60,733
217 JOINT TACTICAL GROUND SYSTEM.....	13,379	13,379
219 SECURITY AND INTELLIGENCE ACTIVITIES.....	24,531	24,531
220 INFORMATION SYSTEMS SECURITY PROGRAM.....	15,720	15,720
221 GLOBAL COMBAT SUPPORT SYSTEM.....	52,739	45,297
222 SATCOM GROUND ENVIRONMENT (SPACE).....	15,247	15,247
226 INTEGRATED BROADCAST SERVICE (IBS).....	5,430	5,430
227 TACTICAL UNMANNED AERIAL VEHICLES.....	8,410	8,410

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
228 AIRBORNE RECONNAISSANCE SYSTEMS.....	24,460	24,460
233 BIOMETRICS ENABLED INTELLIGENCE.....	2,066	2,066
234 END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES.....	61,720	103,720
TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT.....	1,377,255	1,463,479
CLASSIFIED PROGRAMS.....	2,993	2,993
237 DEFENSIVE CYBER - SOFTWARE PROTOTYPE DEVELOPMENT.....	118,811	108,889
TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, ARMY.....	12,799,645	14,539,417

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**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
 [In thousands of dollars]

R-1	Budget Request	Final Bill
<b>1 DEFENSE RESEARCH SCIENCES</b>	<b>297,241</b>	<b>370,241</b>
Program increase - explosives and opioids dual-use UV detection		5,000
Program increase - joint research laboratories		20,000
Program increase - lightweight high entropy metallic alloy discovery		3,000
Program increase - cell-free expression for biomanufacturing		10,000
Program increase - unmanned aerial systems hybrid propulsion		5,000
Program increase - digital thread for advanced manufacturing		5,000
Program increase - basic research		25,000
<b>2 UNIVERSITY RESEARCH INITIATIVES</b>	<b>66,981</b>	<b>91,981</b>
Program increase - defense university research instrumentation program		25,000
<b>3 UNIVERSITY AND INDUSTRY RESEARCH CENTERS</b>	<b>94,003</b>	<b>127,253</b>
Program increase - Army artificial intelligence innovation		20,000
Program increase - biotechnology advancements		4,000
Program increase - materials in extreme dynamic environments plus		5,000
Project increase - The Discovery Center at Water's Edge		250
Program increase - hypervelocity testing		3,000
Program increase - soldier protection materials		1,000
<b>5 ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING BASIC RESEARCH</b>	<b>10,183</b>	<b>15,183</b>
Program increase - extreme events in structurally evolving materials		5,000
<b>8 LETHALITY TECHNOLOGY</b>	<b>64,126</b>	<b>91,626</b>
Program increase - next generation remote sensing		3,000
Program increase - hybrid additive manufacturing for advanced lethality		5,000
Program increase - materials processing manufacturing technology		10,000
Program increase - universal nanocrystalline alloys		3,000
Program increase - hypersonic wind tunnel development		6,500
<b>10 SOLDIER LETHALITY TECHNOLOGY</b>	<b>105,168</b>	<b>205,168</b>
Program increase - Catalyst TRACA data ready		5,000
Program increase - HEROES		5,000
Program increase - Pathfinder airborne		8,000
Program increase - enhancing soldier ballistic technologies		5,000
Program increase - advanced silicon anode material for batteries		10,000
Program increase - advanced textiles and shelters		6,000
Program increase - academic accelerator program		15,000
Program increase - military footwear research		3,000
Program increase - Pathfinder transitional research advanced capability acceleration		8,000
Program increase - Pathfinder air assault		10,000
Program increase - materials development for personal protective systems		10,000
Program increase - digital night vision technology		5,000
Program increase - nanolayered polymer optics		10,000

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	Budget Request	Final Bill
<b>11 GROUND TECHNOLOGY</b>	<b>56,400</b>	<b>216,550</b>
Program increase - additive manufacturing machine learning initiative		5,000
Program increase - advanced manufacturing materials processes initiative		10,000
Program increase - autonomous digital design and manufacturing		5,000
Program increase - defense resiliency against extreme cold weather		10,000
Program increase - electrolyzer		7,000
Program increase - environmental quality enhanced coatings		5,000
Program increase - flexible hybrid electronics and environmental sustainability		12,000
Program increase - high performance polymers		5,000
Program increase - materials recovery technologies for defense supply resiliency		10,000
Program increase - solid oxide fuel cell development		10,000
Program increase - advanced polymers for force protection		8,000
Program increase - advanced materials manufacturing		8,000
Program increase - anti-corrosion materials		7,000
Program increase - ceramic materials for extreme environments		8,000
Program increase - earthen structures soil enhancement		4,000
Program increase - PFAS modeling		5,000
Program increase - polar proving ground and training program		2,000
Program increase - rapid advanced deposition		5,000
Program increase - rare earth initiative		7,000
Program increase - verified inherent control		10,000
Program increase - rapid infrastructure development and engineering		3,000
Program increase - climate and natural hazards, snow-covered and mountain environment sensing research		6,000
Program increase - integrity of transparent armor		5,000
Program increase - tank tracks		3,150
<b>12 NEXT GENERATION COMBAT VEHICLE TECHNOLOGY</b>	<b>172,166</b>	<b>245,966</b>
Program increase - advanced materials development for survivability		5,000
Program increase - advanced optics program		4,300
Program increase - digital design and simulated testing		4,000
Program increase - highly electrified vehicles		5,000
Program increase - prototyping energy smart autonomous ground systems		10,000
Program increase - silicon carbide electronics		5,500
Program increase - vehicle equivalency framework utilizing multiple additive manufacturing platforms		5,000
Program increase - virtual experimentation of autonomous and non-autonomous combat vehicles		3,000
Program increase - fast-refueling fuel cell engines		7,000
Program increase - hydrogen technologies		10,000
Program increase - machine learning optimized power electronics		3,000
Program increase - zero emission combat vehicles		3,000
Program increase - systems engineering for autonomous ground vehicles		9,000

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<b>13 NETWORK C3I TECHNOLOGY</b>	<b>84,606</b>	<b>164,906</b>
Program increase - backpackable COMINT system		5,000
Program increase - EW and advanced sensing		6,500
Program increase - integrated photonics for contested RF environments		15,000
Program increase - ALTNV		13,800
Program increase - anti-tamper technology		5,000
Program increase - mobile environmental contaminant sensors		5,000
Program increase - mass-distributed acoustic surveillance network		8,000
Program increase - distributed radio frequency and sensor technology development		8,000
Program increase - urban subterranean mapping technologies		4,000
Program increase - social network analysis		5,000
Program increase - energy efficient devices		5,000
<b>14 LONG RANGE PRECISION FIRES TECHNOLOGY</b>	<b>64,285</b>	<b>93,785</b>
Program increase - extended range and hybrid gun launched unmanned aerial systems		10,000
Program increase - high speed structures for advanced materials		10,000
Program increase - novel printed armament components		3,000
Program increase - extended range propulsion technology		6,500
<b>15 FUTURE VERTICAL LIFT TECHNOLOGY</b>	<b>91,411</b>	<b>133,411</b>
Program increase - high strength functional composites		5,000
Program increase - individual blade and higher harmonic control		5,000
Program increase - adaptive flight control technology		7,000
Program increase - high density eVOTL power source		15,000
Program increase - rotor blade operational readiness		5,000
Program increase - missile technology transfer and innovation		5,000
<b>16 AIR AND MISSILE DEFENSE TECHNOLOGY</b>	<b>19,316</b>	<b>93,566</b>
Program increase - beam control systems and industry grade optical fiber fabrication for directed energy laser		12,000
Program increase - counter UAS center for excellence		5,000
Program increase - machine learning optimized power electronics		3,000
Program increase - precision long range integrated strike		5,250
Program increase - Army missile risk-based mission assurance		15,000
Program increase - HEL lethality testing and expansion		10,000
Program increase - HEL optical technology		6,000
Program increase - HEL technology integration		10,000
Program increase - kill chain automation		8,000
<b>25 MEDICAL TECHNOLOGY</b>	<b>91,720</b>	<b>121,187</b>
Program increase - military force vector borne health protection		5,000
Program increase - RNA therapeutics for infectious disease threats		7,500
Project increase - National Trauma Research Repository Data Population Project		1,900
Project increase - Holistic Health and Fitness		1,500
Project increase - Center for Excellence in Military Health and Performance Enhancement		3,567
Program increase - physiological study of female warfighters to improve training		5,000
Program increase - biological performance technology		5,000

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	Budget Request	Final Bill
<b>26 MEDICAL ADVANCED TECHNOLOGY</b>	<b>43,804</b>	<b>137,804</b>
Program increase - hearing protection for communications		5,000
Program increase - optimizing military health and performance		7,000
Program increase - peer-reviewed military burn research		10,000
Program increase - peer-reviewed neurofibromatosis research		20,000
Program increase - peer-reviewed Parkinson's research		16,000
Program increase - burn care training curriculum		5,000
Program increase - heat stress on female service members		2,000
Program increase - rapid vaccine development		10,000
Program increase - trauma immunology research		5,000
Program increase - dengue vaccine development		6,000
Program increase - suicide prevention with focus on rural, remote, isolated, and OCONUS installations		3,000
Program increase - Aerial Reconfigurable Embedded System		5,000
<b>37 SOLDIER LETHALITY ADVANCED TECHNOLOGY</b>	<b>107,966</b>	<b>152,466</b>
Program increase - small arms fire control advanced technology		8,000
Program increase - advanced AI/AA analytics for modernization and readiness		10,000
Program increase - ferrium steel for improved personal protective equipment		5,000
Program increase - human machine teaming		4,000
Program increase - impact attenuation materials for limb protection		1,500
Program increase - soldier situational awareness		8,000
Program increase - squad operations advanced resupply		8,000

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	Budget Request	Final Bill
<b>38 GROUND ADVANCED TECHNOLOGY</b>	<b>23,403</b>	<b>280,503</b>
Program increase - 3D printing of infrastructure		5,000
Program increase - clean modular hydro technology		8,000
Program increase - composite flywheel technology		7,000
Program increase - cross-laminated timber and recycled carbon fiber materials		5,500
Program increase - electrical system safety and reliability		5,000
Program increase - electrochemical conversion of waste streams		5,000
Program increase - expeditionary additive construction		15,000
Program increase - explosive materials detection		3,000
Program increase - high-performance concrete		6,000
Program increase - microgrid reliability and resiliency		10,000
Program increase - military waste stream conversion		5,000
Program increase - organic light emitting diode		5,000
Program increase - power generation for increased facility resilience pilot		10,000
Program increase - rapid entry and sustainment for the arctic		8,000
Program increase - secure management of energy generation and storage		5,000
Program increase - water quality and resiliency technologies		5,000
Program increase - accelerator technology for ground maneuver		5,000
Program increase - additive construction for field deployment		4,000
Program increase - anticipating threats to natural systems		5,000
Program increase - coastal terrain hazard research		6,000
Program increase - autonomous construction and manufacturing		5,000
Program increase - autonomous combat engineering solutions		4,000
Program increase - biofuel		6,000
Program increase - biomass polymer technology		2,000
Program increase - cold weather energy research		5,000
Program increase - cold weather research		3,000
Program increase - distributed technologies for steam loop replacements		5,000
Program increase - frost heave effects monitoring		4,500
Program increase - graphene applications for military engineering		10,000
Program increase - hardened facility standards		4,600
Program increase - impacts of soil structures on hydrology		5,000
Program increase - infrastructure resilience and flood assessment		3,500
Program increase - infrastructure smart technology		5,000
Program increase - materials and manufacturing technology for cold environments		4,000
Program increase - partnership and technology transfer		4,000
Program increase - power projection		7,000
Program increase - sustainable smart utilities		5,000
Program increase - water resiliency and self sufficiency		4,000
Program increase - 3D printing of concrete		2,000
Program increase - entry control points at installations		5,000
Program increase - low carbon hydrogen technologies		10,000
Program increase - assessments and monitoring systems for historic structures		5,000
Program increase - high power fast charging for electric vehicle fleets		3,000
Program increase - water reuse consortium		10,000
Program increase - watercraft simulator		4,000
Program increase - cold weather research station		2,000
Program increase - Army visual and tactical arctic reconnaissance		2,000
<b>41 C3I CYBER ADVANCED DEVELOPMENT</b>	<b>31,426</b>	<b>61,426</b>
Program increase - high bandwidth cryptomodule enhancements and certification		30,000
<b>42 HIGH PERFORMANCE COMPUTING MODERNIZATION</b>	<b>189,123</b>	<b>229,123</b>
Program increase		40,000

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	Budget Request	Final Bill
<b>43 NEXT GENERATION COMBAT VEHICLE ADVANCED TECHNOLOGY</b>	<b>164,951</b>	<b>300,201</b>
Program increase - additive manufacturing for jointless hull		15,000
Program increase - advanced adhesives		5,000
Program increase - ATE5.2 engine development		5,000
Program increase - carbon fiber and graphitic foam		5,000
Program increase - carbon fiber tires		5,000
Program increase - combat vehicle lithium 6T battery development		5,000
Program increase - combat vehicle weight reduction initiative		5,000
Program increase - force protection vehicle kit		5,000
Program increase - fuel cell technology		5,000
Program increase - machine learning for advanced lightweight combat vehicle structures		6,000
Program increase - RCV-L		5,000
Program increase - short fiber thermoplastic applications		4,000
Program increase - virtual autonomy environment		3,750
Program increase - advanced materials applications		12,000
Program increase - augmented reality for denied environments		7,000
Program increase - autonomous minefield clearance		7,000
Program increase - autonomous vehicle mobility		10,000
Program increase - HMMWV automotive enhancements		3,000
Program increase - predictive maintenance system		2,000
Program increase - unmanned navigation technology		2,500
Program increase - virtual and physical prototyping		8,000
Program increase - off-road maneuver		5,000
Program increase - maneuverable lightweight electric weight reducer		5,000
<b>44 NETWORK C3I ADVANCED TECHNOLOGY</b>	<b>155,867</b>	<b>211,367</b>
Program increase - APNT technology		4,000
Program increase - advanced materials for resilient sensors		5,000
Program increase - alternative navigation for GPS-denied landing environments		4,500
Program increase - edge-high performance computing for multi-domain operations		5,000
Program increase - HALITE		7,000
Program increase - next generation command posts		10,000
Program increase - receiver-sensor technology for tactical networks		15,000
Program increase - tactical geospatial information capabilities		5,000
<b>45 LONG RANGE PRECISION FIRES ADVANCED TECHNOLOGY</b>	<b>93,909</b>	<b>141,909</b>
Program increase - extended range artillery munitions suite		20,000
Program increase - hypervelocity projectile extended range		25,000
Program increase - maneuvering submunitions for precision strike missile		3,000

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	Budget Request	Final Bill
<b>46 FUTURE VERTICAL LIFT ADVANCED TECHNOLOGY</b>	<b>179,677</b>	<b>262,177</b>
Program increase - data refinement and optimization for aviation sustainment		4,500
Program increase - FLEETSPACE maintenance tool		4,500
Program increase - FVL surface tolerant adhesives		4,000
Program increase - joint tactical aerial resupply vehicle		8,000
Program increase - UH-60 main rotor blade modernization		5,000
Program increase - 20mm chaingun development for FLRAA		8,000
Program increase - digital backbone		5,000
Program increase - elastomeric imaging		3,000
Program increase - platform digitization and maintenance		5,000
Program increase - stretch broken carbon fiber		10,000
Program increase - UAS fuel systems enhancements		2,000
Program increase - composite structures		5,000
Program increase - degraded visual environment		3,500
Program increase - air launched turbojet missile		15,000
<b>47 AIR AND MISSILE DEFENSE ADVANCED TECHNOLOGY</b>	<b>48,826</b>	<b>145,826</b>
Program increase - IFPC HEL risk reduction		46,000
Program increase - thermal management systems for 10kw to 50 kw lasers		12,000
Program increase - missile MENTOR		15,000
Program increase - armored combat vehicle HEL integration		11,000
Program increase - HEL for all-terrain vehicles		5,000
Program increase - silicon carbide electronics		8,000
<b>48 HUMANITARIAN DEMINING</b>	<b>8,649</b>	<b>19,000</b>
Program increase		10,351
<b>49 ARMY MISSILE DEFENSE SYSTEMS INTEGRATION</b>	<b>11,702</b>	<b>56,702</b>
Program increase - A2IFS		23,500
Program increase - electro-magnetic denial and protect		6,000
Program increase - integrated environmental control and power		5,000
Program increase - multiple engagement end-to-end testbed		2,500
Program increase - PNT resiliency lab		8,000
<b>50 ARMY SPACE SYSTEMS INTEGRATION</b>	<b>18,755</b>	<b>25,755</b>
Program increase - communications resiliency arrays of distributed local elements		5,000
Program increase - multi-function and multi-mission payload		2,000
<b>51 AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING</b>	<b>0</b>	<b>15,000</b>
Program increase - machine learning for integrated fires		10,000
Program increase - software memory protection methods		5,000
<b>52 LANDMINE WARFARE AND BARRIER - ADV DEV</b>	<b>50,314</b>	<b>46,687</b>
SAVO OTA previously funded		-386
SAVO test requirements previously funded		-1,186
Next generation mounted breaching system TMRR government costs ahead of need		-555
Next generation mounted breaching system experimentation testing ahead of need		-1,500
<b>53 TANK AND MEDIUM CALIBER AMMUNITION</b>	<b>79,873</b>	<b>73,963</b>
Testing excess		-2,500
LRPM product development ahead of need		-3,410

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R-1	Budget Request	Final Bill
<b>54 ARMORED SYSTEM MODERNIZATION - ADV DEV</b>	<b>170,590</b>	<b>164,340</b>
Testing excess		-4,250
Experimental prototyping excess to need		-6,000
Program increase - advanced combat engine		4,000
<b>57 NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT</b>	<b>18,000</b>	<b>62,820</b>
HUD ECP ahead of need		-10,180
Transfer from OPA line 83 for IVAS development		55,000
<b>58 ENVIRONMENTAL QUALITY TECHNOLOGY - DEM/VAL</b>	<b>11,921</b>	<b>22,921</b>
Program increase - underwater cut and capture demonstration		3,000
Program increase - wire-arc additive manufacturing		5,000
Program increase - biopolymers for military infrastructure		3,000
<b>60 AVIATION - ADV DEV</b>	<b>1,125,641</b>	<b>1,178,460</b>
FLRAA PM costs excess growth		-4,500
FARA prototype costs previously funded		-10,000
FARA ecosystem excess		-5,000
FARA MOSA development excess		-5,000
Program increase - all electric flight control systems		5,000
FARA SEPM unjustified growth		-5,181
Program increase - FLRAA		77,500
<b>61 LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV</b>	<b>7,055</b>	<b>11,055</b>
Program increase - lightweight portable power generation		4,000
<b>62 MEDICAL SYSTEMS - ADV DEV</b>	<b>22,071</b>	<b>37,071</b>
Program increase - wearable medical device for TBI prevention		5,000
Program increase - freeze-dried platelets		10,000
<b>63 SOLDIER SYSTEMS - ADVANCED DEVELOPMENT</b>	<b>17,459</b>	<b>25,959</b>
Program increase - multi-spectral signature management		4,500
Program increase - lightweight C-sUAS force protection system		4,000
<b>64 ROBOTICS DEVELOPMENT</b>	<b>87,198</b>	<b>80,712</b>
Other support costs unjustified growth		-11,820
Prototype manufacturing costs ahead of need		-8,615
Modeling and simulation carryover		-6,051
Program increase - robotic combat vehicle - medium		20,000
<b>65 EXPANDED MISSION AREA MISSILE (EMAM)</b>	<b>50,674</b>	<b>27,872</b>
IFPC-HEL prototype contract ahead of need		-6,757
IFPC-HPM prototype contract ahead of need		-16,045
<b>72 FUTURE TACTICAL UNMANNED AIRCRAFT SYSTEM (FTUAS)</b>	<b>69,697</b>	<b>76,349</b>
Program increase - future unmanned aircraft systems		15,000
FUAS labor excess due to acquisition strategy change		-13,348
Program increase - micro-IFF for FTUAS		5,000
<b>73 LOWER TIER AIR MISSILE DEFENSE (LTAMD) SENSOR</b>	<b>327,690</b>	<b>297,629</b>
Long term power and support costs ahead of need		-10,061
Prototyping/P3I carryover		-10,955
Test and evaluation carryover		-9,045

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R-1		Budget Request	Final Bill
74	<b>TECHNOLOGY MATURATION INITIATIVES</b>	270,124	132,561
	Failure to properly manage rescission		-30,041
	Emerging technology development initiatives undefined requirements		-34,920
	Super-system and technology product prototyping undefined requirement		-72,602
77	<b>ASSURED POSITIONING, NAVIGATION AND TIMING (PNT)</b>	96,679	84,795
	MAPS client platform and integration transitioning to procurement		-11,884
78	<b>SYNTHETIC TRAINING ENVIRONMENT REFINEMENT &amp; PROTOTYPING</b>	194,195	206,335
	AvSE excess to need		-2,460
	Program increase - multi-sensor terrain data capture and processing		4,600
	Program increase - next generation MILES		10,000
80	<b>HYPERSONICS</b>	300,928	315,448
	Overestimation of GSE		-34,480
	Program increase - glidebody risk reduction		44,000
	Program increase - near net shape materials		5,000
81	<b>FUTURE INTERCEPTOR</b>	7,895	6,895
	Excess to need		-1,000
86	<b>CYBERSPACE OPERATIONS FORCES AND FORCE SUPPORT</b>	52,988	55,988
	Prior year PCTE excess to OTA award		-1,000
	Program increase - Army cyber institutes		4,000
91	<b>INFANTRY SUPPORT WEAPONS</b>	67,873	79,339
	Program increase - cannon life extension program		1,500
	Program increase - turret gunner survivability and simulation environment		5,000
	Advanced tactical parachute DT/OT unjustified growth		-935
	Next generation fire control OTA savings		-4,099
	Program increase - soldier enhancement program		10,000
92	<b>MEDIUM TACTICAL VEHICLES</b>	11,374	9,524
	OT previously funded		-1,850
94	<b>FAMILY OF HEAVY TACTICAL VEHICLES</b>	31,602	28,445
	EHETS training ahead of need		-1,632
	Leader/follower test support ahead of need		-1,525
97	<b>ARMORED SYSTEMS MODERNIZATION (ASM) - ENG DEV</b>	137,256	122,778
	SSEB excess		-1,750
	MPF program management costs transition to procurement		-1,956
	Excess to need		-10,772
98	<b>NIGHT VISION SYSTEMS - ENG DEV</b>	62,690	43,417
	NVG-N undefined acquisition strategy		-19,273
104	<b>DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - ENG DEV</b>	7,453	12,453
	Program increase - Bathymetric unmanned littoral LiDar		5,000

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R-1	Budget Request	Final Bill
<b>108 WEAPONS AND MUNITIONS - ENG DEV</b>	<b>309,778</b>	<b>297,214</b>
C-DAEM overestimation		-3,056
Unjustified growth - XM654 engineering support		-3,658
XM654 cased supercharge qualification testing ahead of need		-1,000
Reduction in .50 cal reduced range ammunition EMD vendors		-1,350
7.62mm reduced range ammunition EMD down-select previously funded		-1,500
OWL 7.62mm EMD down-select previously funded		-2,000
<b>109 LOGISTICS AND ENGINEER EQUIPMENT - ENG DEV</b>	<b>59,261</b>	<b>54,661</b>
Carryover		-5,000
FoHMLC-B DSB max weight testing previously funded		-1,600
Program increase - national hydrography dataset		2,000
<b>112 LANDMINE WARFARE/BARRIER - ENG DEV</b>	<b>14,137</b>	<b>29,137</b>
Program increase - prototype integration		15,000
<b>113 ARMY TACTICAL COMMAND &amp; CONTROL HARDWARE &amp; SOFTWARE</b>	<b>162,704</b>	<b>155,217</b>
CECOM contract delays		-1,946
Rigid wall shelter duplication		-1,450
AIC modernization ahead of need		-2,147
Unjustified growth - Army Tactical C2 Systems Engineering		-1,944
<b>114 RADAR DEVELOPMENT</b>	<b>127,919</b>	<b>122,607</b>
A4 product development excess to need		-5,312
<b>115 GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBs)</b>	<b>17,623</b>	<b>15,979</b>
GFEBs capability enhancement carryover		-1,644
<b>118 SUITE OF SURVIVABILITY ENHANCEMENT SYSTEMS - EMD</b>	<b>106,354</b>	<b>96,132</b>
PM maintain level of effort		-2,300
Survivability enhancements unjustified growth		-3,922
MAC carryover		-20,000
Program increase - BFV active protection system		16,000
<b>119 ARTILLERY SYSTEMS - EMD</b>	<b>0</b>	<b>25,000</b>
Program increase - soft recoil artillery systems		25,000
<b>120 INFORMATION TECHNOLOGY DEVELOPMENT</b>	<b>122,168</b>	<b>129,515</b>
GFIM Phase II insufficient budget justification		-3,429
USMIRS 1.1 non-core applications overestimation		-1,724
Program increase - installation access control technology		4,500
Program increase - smart installation and community program		8,000
<b>121 INTEGRATED PERSONNEL AND PAY SYSTEM-ARMY (IPPS-A)</b>	<b>76,936</b>	<b>67,701</b>
Prior year carryover		-5,000
Funded in operation and maintenance		-4,235
<b>133 CONTRACT WRITING SYSTEM</b>	<b>22,960</b>	<b>20,960</b>
ACWS product development delays		-2,000

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R-1	Budget Request	Final Bill
<b>135 AIRCRAFT SURVIVABILITY DEVELOPMENT</b>	<b>65,603</b>	<b>61,768</b>
Machine learning unjustified need		-1,535
LIMWS development carryover		-5,300
Program increase - aviation AI virtual training environment		3,000
<b>136 INDIRECT FIRE PROTECTION CAPABILITY INC 2 - BLOCK 1</b>	<b>233,512</b>	<b>182,268</b>
OTA prototyping ahead of need		-51,244
<b>137 GROUND ROBOTICS</b>	<b>18,241</b>	<b>16,360</b>
S-MET PMO support transition to procurement		-700
Common Robotic Controller PMO support unjustified growth		-1,181
<b>138 EMERGING TECHNOLOGY INITIATIVES</b>	<b>254,945</b>	<b>227,303</b>
Program increase - high energy laser targeting systems		5,000
Program increase - cUAS integration with robotic vehicles		5,000
Unjustified growth - concept prototyping		-37,642
<b>140 NEXT GENERATION LOAD DEVICE - MEDIUM</b>	<b>15,616</b>	<b>15,397</b>
Test and evaluation ahead of need		-219
<b>149 ACCESSIONS INFORMATION ENVIRONMENT (AIE)</b>	<b>18,790</b>	<b>16,790</b>
Development delays		-2,000
<b>151 ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)</b>	<b>157,873</b>	<b>159,873</b>
Beyond IOC costs ahead of need		-4,000
Program increase - kill chain automation		6,000
<b>153 MANNED GROUND VEHICLE</b>	<b>225,106</b>	<b>202,320</b>
PM support excess		-5,500
Unjustified growth - other support costs		-8,886
Phase 2 contract savings		-8,400
<b>154 NATIONAL CAPABILITIES INTEGRATION (MIP)</b>	<b>14,454</b>	<b>13,454</b>
Air Vigilance development overestimation		-1,000
<b>162 THREAT SIMULATOR DEVELOPMENT</b>	<b>18,439</b>	<b>61,439</b>
Program increase - cybersecurity operations center		40,000
Program increase - threat cyberspace operations		3,000
<b>163 TARGET SYSTEMS DEVELOPMENT</b>	<b>17,404</b>	<b>42,404</b>
Program increase - UAS swarm threat representation, detection, and mitigation		25,000
<b>164 MAJOR T&amp;E INVESTMENT</b>	<b>68,139</b>	<b>93,739</b>
Program increase - advancing operational test infrastructure		25,600
<b>169 ARMY TEST RANGES AND FACILITIES</b>	<b>354,227</b>	<b>367,227</b>
Program increase - counter-UAS HEL platform integration		10,000
Program increase - environmental characterization for test operations		3,000
<b>170 ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS</b>	<b>49,253</b>	<b>59,253</b>
Program increase - RAMP-T		10,000

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R-1	Budget Request	Final Bill
<b>180 TECHNICAL INFORMATION ACTIVITIES</b>	<b>26,808</b>	<b>32,008</b>
Program increase - extending standard sharable geospatial foundation to tactical edge warriors		5,200
<b>181 MUNITIONS STANDARDIZATION, EFFECTIVENESS AND</b>	<b>43,042</b>	<b>63,042</b>
Program increase - foamable celluloid materials		5,000
Program increase - industrial base resiliency initiative		5,000
Program increase - polymer case ammunition		5,000
Program increase - additive manufacturing of high temperature alloys		5,000
<b>183 ARMY DIRECT REPORT HEADQUARTERS - R&amp;D - MHA</b>	<b>52,108</b>	<b>49,108</b>
Overestimation of requirements		-3,000
<b>192 WEAPONS AND MUNITIONS PRODUCT IMPROVEMENT PROGRAMS</b>	<b>22,828</b>	<b>35,828</b>
Program increase - printed electronics		5,000
Program increase - tungsten manufacturing affordability initiative for armaments		8,000
<b>194 BLACKHAWK PRODUCT IMPROVEMENT PROGRAM</b>	<b>4,773</b>	<b>14,773</b>
Program increase - blade improvement		10,000
<b>195 CHINOOK PRODUCT IMPROVEMENT PROGRAM</b>	<b>52,372</b>	<b>67,872</b>
Program increase - CH-47 engine enhancement		7,500
Program increase - lightweight ballistic protection system		8,000
<b>196 IMPROVED TURBINE ENGINE PROGRAM</b>	<b>275,024</b>	<b>260,024</b>
Platform integration previously funded		-15,000
<b>200 AN/TPQ-53 COUNTERFIRE TARGET ACQUISITION RADAR SYSTEM</b>	<b>56,681</b>	<b>47,752</b>
DDREX NRE phasing		-8,929
<b>207 COMBAT VEHICLE IMPROVEMENT PROGRAMS</b>	<b>211,523</b>	<b>280,130</b>
Program increase - Abrams modernization		65,000
Program increase - next generation auxiliary power unit		5,000
Unjustified growth - Bradley PMO support		-1,393
<b>208 155MM SELF-PROPELLED HOWITZER IMPROVEMENTS</b>	<b>213,281</b>	<b>175,155</b>
ERCA rate of fire prototype build ahead of need		-38,126
<b>209 AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS</b>	<b>0</b>	<b>10,000</b>
Program increase - UAS ground based sense and avoid		10,000
<b>215 LOWER TIER AIR AND MISSILE DEFENSE (AMD) SYSTEM</b>	<b>182</b>	<b>0</b>
Program transitioned to Patriot Product Improvement line		-182
<b>216 GUIDED MULTIPLE-LAUNCH ROCKET SYSTEM (GMLRS)</b>	<b>63,937</b>	<b>60,733</b>
OGA carryover		-3,204
<b>221 GLOBAL COMBAT SUPPORT SYSTEM</b>	<b>52,739</b>	<b>45,297</b>
Testing excess		-2,000
DISCOPS acquisition strategy change		-5,442

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R-1	Budget Request	Final Bill
<b>234 END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES</b>	<b>61,720</b>	<b>103,720</b>
Program increase - liquid hydrogen refueling systems		10,000
Program increase - N2O5		10,000
Program increase - advanced manufacturing cell for missile fins		8,000
Program increase - lightweight transparent film armor		4,000
Program increase - scalable manufacturing of engineered fabrics		5,000
Program increase - nanoscale materials manufacturing		5,000
<b>237 DEFENSIVE CYBER - SOFTWARE PROTOTYPE DEVELOPMENT</b>	<b>118,811</b>	<b>108,889</b>
Overestimation of program management costs		-6,922
Overestimation of DCO mission planning costs		-3,000
Cyberspace analytics excess to need		

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#### ANTIMICROBIAL TEXTILES

The agreement directs the Assistant Secretary of Defense for Sustainment, not later than 180 days after the enactment of this Act, to provide a report to the congressional defense committees on the current efforts, effectiveness, and feasibility of including antimicrobial and antiviral technology in the manufacturing of Service-issued clothing and individual equipment. The report shall include an analysis of the technical maturity of available antimicrobial and antiviral textile-based solutions and a strategy for incorporating any technically mature solutions into Service issued clothing or personal equipment. The report shall also include a review of the ability of the industrial base to support the manufacturing of these products and identify any resources or capability gaps that exist within the industrial base to meet the demand.

#### STRATEGIC LONG RANGE CANNON

The Strategic Long Range Cannon (SLRC) is one of the Army's 35 modernization priorities. However, the fiscal year 2022 budget request does not explicitly identify funding for SLRC, despite requests in the previous two budgets. The Army has indicated to the congressional defense committees that the program is still viable and intends to continue to make progress towards fielding SLRC, including the use of fiscal year 2022 appropriated funding. Without a request for funding or a plan to further mature the system in fiscal year 2022, the agreement does not recommend funding for SLRC. Therefore, if the Army intends to resource SLRC in fiscal year 2022, the Secretary of the Army is directed to submit to the House and Senate Appropriations Committees, not later than 30 days prior to obligation of funds, a comprehensive funding plan across the future years defense program and a detailed schedule of activities.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, NAVY

The agreement provides \$22,139,080,000 for Research, Development, Test and Evaluation, Navy, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT 118A-S

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY		
1	BASIC RESEARCH	
	UNIVERSITY RESEARCH INITIATIVES.....	117,448 174,898
3	DEFENSE RESEARCH SCIENCES.....	484,421 523,421
	TOTAL, BASIC RESEARCH.....	601,869 698,319
APPLIED RESEARCH		
4	POWER PROJECTION APPLIED RESEARCH.....	23,013 43,013
5	FORCE PROTECTION APPLIED RESEARCH.....	122,888 222,388
6	MARINE CORPS LANDING FORCE TECHNOLOGY.....	51,112 64,112
7	COMMON PICTURE APPLIED RESEARCH.....	51,477 51,477
8	WARFIGHTER SUSTAINMENT APPLIED RESEARCH.....	70,547 117,738
9	ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH.....	85,157 91,157
10	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH.....	70,086 103,586
11	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH.....	6,405 6,405
12	UNDERSEA WARFARE APPLIED RESEARCH.....	57,484 107,734
13	FUTURE NAVAL CAPABILITIES APPLIED RESEARCH.....	173,356 198,233
14	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH.....	32,160 42,160
15	INNOVATIVE NAVAL PROTOTYPES (INP) APPLIED RESEARCH....	152,976 155,976
16	SCIENCE AND TECHNOLOGY MANAGEMENT - ONR HEADQUARTERS..	79,254 79,254
	TOTAL, APPLIED RESEARCH.....	975,915 1,283,233
ADVANCED TECHNOLOGY DEVELOPMENT		
17	FORCE PROTECTION ADVANCED TECHNOLOGY.....	21,661 36,161
18	ELECTROMAGNETIC SYSTEMS ADVANCED TECHNOLOGY.....	8,146 12,146
19	MARINE CORPS ADVANCED TECHNOLOGY DEMONSTRATION (ATD)...	224,155 291,791
20	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT.....	13,429 13,429
21	FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEV.....	265,299 282,237
22	MANUFACTURING TECHNOLOGY PROGRAM.....	57,236 77,236
23	WARFIGHTER PROTECTION ADVANCED TECHNOLOGY.....	4,935 40,435
24	NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS.....	47,167 60,167
25	MINE AND EXPEDITIONARY WARFARE ADVANCED TECHNOLOGY....	1,981 1,981
26	INNOVATIVE NAVAL PROTOTYPES (INP) ADVANCED TECHNOLOGY..	133,779 156,613
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT.....	777,788 972,196
ADVANCED COMPONENT DEVELOPMENT AND PROTOTYPES		
27	UNMANNED AERIAL SYSTEM.....	16,879 16,167

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL	
28	LARGE UNMANNED SURFACE VEHICLES (LUSVS).....	144,846	102,846
29	AIR/OCEAN TACTICAL APPLICATIONS.....	27,849	27,849
30	AVIATION SURVIVABILITY.....	16,815	24,815
31	NAVAL CONSTRUCTION FORCES.....	5,290	5,290
33	ASW SYSTEMS DEVELOPMENT.....	17,612	20,612
34	TACTICAL AIRBORNE RECONNAISSANCE.....	3,111	3,111
35	ADVANCED COMBAT SYSTEMS TECHNOLOGY.....	32,310	35,310
36	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES.....	58,013	53,391
37	SURFACE SHIP TORPEDO DEFENSE.....	1,862	8,862
38	CARRIER SYSTEMS DEVELOPMENT.....	7,182	7,182
39	PILOT FISH.....	408,087	408,087
40	RETRACT LARCH.....	44,197	44,197
41	RETRACT JUNIPER.....	144,541	144,541
42	RADIOLOGICAL CONTROL.....	761	761
43	SURFACE ASW.....	1,144	1,144
44	ADVANCED SUBMARINE SYSTEM DEVELOPMENT.....	99,782	99,782
45	SUBMARINE TACTICAL WARFARE SYSTEMS.....	14,059	14,059
46	SHIP CONCEPT ADVANCED DESIGN.....	111,590	126,618
47	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES.....	106,957	40,787
48	ADVANCED NUCLEAR POWER SYSTEMS.....	203,572	203,572
49	ADVANCED SURFACE MACHINERY SYSTEMS.....	78,122	76,922
50	CHALK EAGLE.....	80,270	80,270
51	LITTORAL COMBAT SHIP (LCS).....	84,924	82,518
52	COMBAT SYSTEM INTEGRATION.....	17,322	17,322
53	OHIO REPLACEMENT.....	296,231	311,231
54	LCS MISSION MODULES.....	75,995	75,995
55	AUTOMATED TEST AND RE-TEST.....	7,805	37,805
56	FRIGATE DEVELOPMENT.....	109,459	100,203
57	CONVENTIONAL MUNITIONS.....	7,296	7,296
58	MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM.....	77,065	66,565
59	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT.....	34,785	34,785
60	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT.....	8,774	8,774
61	ENVIRONMENTAL PROTECTION.....	20,677	20,677
62	NAVY ENERGY PROGRAM.....	33,824	57,824

118B

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
63 FACILITIES IMPROVEMENT.....	6,327	6,327
64 CHALK CORAL.....	579,389	579,389
65 NAVY LOGISTIC PRODUCTIVITY.....	669	669
66 RETRACT MAPLE.....	295,295	295,295
67 LINK PLUMERIA.....	692,280	663,780
68 RETRACT ELM.....	83,904	83,904
69 LINK EVERGREEN.....	221,253	264,453
71 NATO RESEARCH AND DEVELOPMENT.....	5,805	5,805
72 LAND ATTACK TECHNOLOGY.....	4,017	4,017
73 JOINT NONLETHAL WEAPONS TESTING.....	29,589	28,168
74 JOINT PRECISION APPROACH AND LANDING SYSTEMS.....	24,450	22,950
75 DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS.....	81,803	81,803
76 F/A-18 INFRARED SEARCH AND TRACK (IRST).....	48,793	48,793
77 DIGITAL WARFARE.....	46,769	46,769
78 SMALL AND MEDIUM UNMANNED UNDERSEA VEHICLES.....	84,676	79,947
79 UNMANNED UNDERSEA VEHICLE CORE TECHNOLOGIES.....	59,299	66,137
81 LARGE UNMANNED UNDERSEA VEHICLES.....	88,063	66,651
82 GERALD R. FORD CLASS NUCLEAR AIRCRAFT CARRIER.....	121,509	121,509
83 LITTORAL AIRBORNE MCM.....	18,669	18,669
84 SURFACE MINE COUNTERMEASURES.....	13,655	12,507
85 TACTICAL AIR DIRECTIONAL INFRARED COUNTERMEASURES.....	33,246	33,246
86 NEXT GENERATION LOGISTICS.....	1,071	8,071
87 FUTURE VERTICAL LIFT (MARITIME STRIKE).....	9,825	8,274
88 RAPID TECHNOLOGY CAPABILITY PROTOTYPE.....	6,555	11,555
89 LX (R).....	3,344	3,344
90 ADVANCED UNDERSEA PROTOTYPING.....	58,473	31,668
91 COUNTER UNMANNED AIRCRAFT SYSTEMS (C-UAS).....	5,529	5,529
92 PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM.....	97,944	90,694
93 SPACE & ELECTRONIC WARFARE (SEW) ARCHITECTURE/ENGINE..	9,340	9,340
94 OFFENSIVE ANTI-SURFACE WARFARE WEAPON DEVELOPMENT.....	127,756	70,792
95 MEDIUM UNMANNED SURFACE VEHICLES (MUSVS).....	60,028	60,028
96 UNMANNED SURFACE VEHICLE ENABLING CAPABILITIES.....	170,838	120,138
97 GROUND BASED ANTI-SHIP MISSILE (MARFORRES).....	102,716	102,716
98 LONG RANGE FIRES (MARFORRES).....	88,479	88,479
99 CONVENTIONAL PROMPT STRIKE (CPS).....	1,372,340	1,324,051

118C

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
100 ASW SYSTEMS DEVELOPMENT - MIP.....	8,571	8,571
101 ADVANCED TACTICAL UNMANNED AIRCRAFT SYSTEM.....	16,204	36,204
102 ELECTRONIC WARFARE DEVELOPMENT - MIP.....	506	506
TOTAL, DEMONSTRATION & VALIDATION.....	7,077,987	6,877,918
SYSTEM DEVELOPMENT & DEMONSTRATION		
103 TRAINING SYSTEM AIRCRAFT.....	5,864	5,864
104 OTHER HELO DEVELOPMENT.....	56,444	49,312
105 AV-8B AIRCRAFT - ENG DEV.....	10,146	10,146
106 STANDARDS DEVELOPMENT.....	4,082	4,082
107 MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT.....	46,418	54,418
108 P-3 MODERNIZATION PROGRAM.....	579	579
109 WARFARE SUPPORT SYSTEM.....	10,167	13,167
110 COMMAND AND CONTROL SYSTEMS.....	122,913	122,913
111 ADVANCED HAWKEYE.....	386,860	348,360
112 H-1 UPGRADES.....	50,158	50,158
113 ACOUSTIC SEARCH SENSORS.....	46,066	49,057
114 V-22A.....	107,984	105,729
115 AIR CREW SYSTEMS DEVELOPMENT.....	22,746	20,746
116 EA-18.....	68,425	59,674
117 ELECTRONIC WARFARE DEVELOPMENT.....	139,535	136,593
118 EXECUTIVE HELO DEVELOPMENT.....	45,932	41,847
119 NEXT GENERATION JAMMER (NGJ).....	243,923	235,407
120 JOINT TACTICAL RADIO SYSTEM - NAVY (JTRS-NAVY).....	234,434	234,434
121 NEXT GENERATION JAMMER (NGJ) INCREMENT II.....	248,096	146,596
122 SURFACE COMBATANT COMBAT SYSTEM ENGINEERING.....	371,575	331,820
123 LPD-17 CLASS SYSTEMS INTEGRATION.....	904	904
124 SMALL DIAMETER BOMB (SDB).....	46,769	40,852
125 STANDARD MISSILE IMPROVEMENTS.....	343,511	343,511
126 AIRBORNE MCM.....	10,881	10,881
127 NAVAL INTEGRATED FIRE CONTROL-COUNTER AIR SYSTEMS ENG.....	46,121	50,233
128 ADVANCED SENSORS APPLICATION PROGRAM (ASAP).....	---	10,000
129 ADVANCED ABOVE WATER SENSORS.....	77,852	62,185
130 SSN-688 AND TRIDENT MODERNIZATION.....	95,693	95,693
131 AIR CONTROL.....	27,499	27,499

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
132 SHIPBOARD AVIATION SYSTEMS.....	8,924	8,924
133 COMBAT INFORMATION CENTER CONVERSION.....	11,631	11,631
134 AIR AND MISSILE DEFENSE RADAR (AMDR) SYSTEM.....	96,556	87,520
135 ADVANCED ARRESTING GEAR (AAG).....	147	147
136 NEW DESIGN SSN.....	503,252	486,938
137 SUBMARINE TACTICAL WARFARE SYSTEM.....	62,115	62,115
138 SHIP CONTRACT DESIGN/LIVE FIRE T&E.....	54,829	54,829
139 NAVY TACTICAL COMPUTER RESOURCES.....	4,290	4,290
140 MINE DEVELOPMENT.....	76,027	37,944
141 LIGHTWEIGHT TORPEDO DEVELOPMENT.....	94,386	94,386
142 JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT.....	8,348	8,348
143 USMC GROUND COMBAT/SUPPORTING ARMS SYSTEMS - ENG DEV..	42,144	42,144
144 PERSONNEL, TRAINING, SIMULATION, AND HUMAN FACTORS.....	7,375	7,375
146 SHIP SELF DEFENSE (DETECT & CONTROL).....	149,433	142,595
147 SHIP SELF DEFENSE (ENGAGE: HARD KILL).....	87,862	107,488
148 SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW).....	69,006	65,460
149 INTELLIGENCE ENGINEERING.....	20,684	20,684
150 MEDICAL DEVELOPMENT.....	3,967	31,467
151 NAVIGATION/ID SYSTEM.....	48,837	50,037
152 JOINT STRIKE FIGHTER (JSF) - EMD.....	577	577
153 JOINT STRIKE FIGHTER (JSF).....	262	262
154 SSN(X).....	29,829	29,829
155 MARINE CORPS IT DEV/MOD.....	11,277	11,277
156 INFORMATION TECHNOLOGY DEVELOPMENT.....	243,828	271,085
157 ANTI-TAMPER TECHNOLOGY SUPPORT.....	8,426	8,426
158 TACAMO MODERNIZATION.....	150,592	50,592
159 CH-53K.....	256,903	256,903
160 MISSION PLANNING.....	88,128	88,128
161 COMMON AVIONICS.....	60,117	60,117
162 SHIP TO SHORE CONNECTOR (SSC).....	6,320	6,320
163 T-AO 205 CLASS.....	4,336	4,336
164 UNMANNED CARRIER AVIATION.....	268,937	261,992
165 JOINT AIR-TO-GROUND MISSILE (JAGM).....	356	356
166 MULTI-MISSION MARITIME AIRCRAFT (MMA).....	27,279	27,279

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
167 MULTI-MISSION MARITIME AIRCRAFT (MMA) INCREMENT 3.....	173,784	162,884
168 MARINE CORPS ASSAULT VEHICLES SYSTEM DEVELOPMENT AND DEMO.....	80,709	73,709
169 JOINT LIGHT TACTICAL VEHICLE (JLTV) SYSTEM DEVELOPMENT AND DEMO.....	2,005	2,005
170 DDG-1000.....	112,576	112,576
174 ISR & INFO OPERATIONS.....	136,140	136,140
175 CYBER OPERATIONS TECHNOLOGY DEVELOPMENT.....	26,318	23,768
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TOTAL, ENGINEERING & MANUFACTURING DEVELOPMENT.....	5,910,089	5,575,543
MANAGEMENT SUPPORT		
176 THREAT SIMULATOR DEVELOPMENT.....	20,862	57,962
177 TARGET SYSTEMS DEVELOPMENT.....	12,113	20,113
178 MAJOR T&E INVESTMENT.....	84,617	105,617
179 STUDIES AND ANALYSIS SUPPORT - NAVY.....	3,108	3,108
180 CENTER FOR NAVAL ANALYSES.....	38,590	38,590
183 TECHNICAL INFORMATION SERVICES.....	934	934
184 MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT.....	93,966	108,966
185 STRATEGIC TECHNICAL SUPPORT.....	3,538	3,538
186 RDT&E SHIP AND AIRCRAFT SUPPORT.....	135,149	135,149
187 TEST AND EVALUATION SUPPORT.....	429,277	446,277
188 OPERATIONAL TEST AND EVALUATION CAPABILITY.....	24,872	24,872
189 NAVY SPACE AND ELECTRONIC WARFARE (SEW) SUPPORT.....	17,653	17,653
190 SEW SURVEILLANCE/RECONNAISSANCE SUPPORT.....	8,065	8,065
191 MARINE CORPS PROGRAM WIDE SUPPORT.....	47,042	43,524
192 MANAGEMENT HEADQUARTERS - R&D.....	35,614	35,614
193 WARFARE INNOVATION MANAGEMENT.....	38,958	38,958
194 INSIDER THREAT.....	2,581	2,581
MANAGEMENT HEADQUARTERS (DEPARTMENTAL SUPPORT ACTIVITIES).....	1,747	1,747
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TOTAL, RDT&E MANAGEMENT SUPPORT.....	998,686	1,093,268
OPERATIONAL SYSTEMS DEVELOPMENT		
199 F-35 C2D2.....	515,746	515,746
200 F-35 C2D2.....	481,962	481,962
201 MARINE CORPS AIR DEFENSE WEAPONS SYSTEMS (MARFORRES).....	65,381	61,381
202 COOPERATIVE ENGAGEMENT CAPABILITY (CEC).....	176,486	162,676

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
203 STRATEGIC SUB & WEAPONS SYSTEM SUPPORT.....	177,098	186,998
204 SSBN SECURITY TECHNOLOGY PROGRAM.....	45,775	45,775
205 SUBMARINE ACOUSTIC WARFARE DEVELOPMENT.....	64,752	59,752
206 NAVY STRATEGIC COMMUNICATIONS.....	35,451	35,451
207 F/A-18 SQUADRONS.....	189,224	219,224
208 SURFACE SUPPORT.....	13,733	13,733
209 TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER (TMPC)...	132,181	132,181
210 INTEGRATED SURVEILLANCE SYSTEM.....	84,276	84,276
211 SHIP-TOWED ARRAY SURVEILLANCE SYSTEMS.....	6,261	6,261
212 AMPHIBIOUS TACTICAL SUPPORT UNITS.....	1,657	1,657
213 GROUND/AIR TASK ORIENTED RADAR.....	21,367	45,367
214 CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT.....	56,741	52,741
215 ELECTRONIC WARFARE (EW) READINESS SUPPORT.....	62,006	55,528
216 HARM IMPROVEMENT.....	133,520	138,520
217 SURFACE ASW COMBAT SYSTEM INTEGRATION.....	28,804	28,804
218 MK-48 ADCAP.....	114,492	100,759
219 AVIATION IMPROVEMENTS.....	132,486	144,621
220 OPERATIONAL NUCLEAR POWER SYSTEMS.....	113,760	113,760
221 MARINE CORPS COMMUNICATIONS SYSTEMS.....	89,897	108,897
222 COMMON AVIATION COMMAND AND CONTROL SYSTEM.....	9,324	12,869
223 MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS....	108,235	103,810
224 MARINE CORPS COMBAT SERVICES SUPPORT.....	13,185	21,185
225 USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS (MIP)....	37,695	37,695
226 AMPHIBIOUS ASSAULT VEHICLE.....	7,551	7,551
227 TACTICAL AIM MISSILES.....	23,881	23,881
228 ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM).....	32,564	32,564
229 PLANNING AND DECISION AID SYSTEM (PDAS).....	3,101	3,101
234 AFLOAT NETWORKS.....	30,890	36,890
235 INFORMATION SYSTEMS SECURITY PROGRAM.....	33,311	33,311
236 JOINT MILITARY INTELLIGENCE PROGRAMS.....	7,514	7,514
237 TACTICAL UNMANNED AERIAL VEHICLES.....	9,837	9,837
238 UAS INTEGRATION AND INTEROPERABILITY.....	9,797	5,000
239 DISTRIBUTED COMMON GROUND SYSTEMS/SURFACE SYSTEMS.....	38,800	29,749
240 MQ-4C TRITON.....	13,029	13,029
241 MQ-8 UAV.....	26,543	33,543

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
242 RQ-11 UAV.....	533	533
243 SMALL (LEVEL 0) TACTICAL UAS (STUASLO).....	1,772	1,772
245 MULTI-INTELLIGENCE SENSOR DEVELOPMENT.....	59,252	59,252
246 UNMANNED AERIAL SYSTEMS (UAS) PAYLOADS (MIP).....	9,274	9,274
247 CYBERSPACE OPERATIONS FORCES AND FORCE SUPPORT.....	36,378	36,378
248 RQ-4 MODERNIZATION.....	134,323	134,323
249 INTELLIGENCE MISSION DATA (IMD).....	907	907
250 MODELING AND SIMULATION SUPPORT.....	9,772	9,772
251 DEPOT MAINTENANCE (NON-IF).....	36,880	50,030
252 MARITIME TECHNOLOGY (MARITECH).....	3,329	6,329
TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT.....	3,440,733	3,516,169
9999 CLASSIFIED PROGRAMS.....	1,872,586	2,093,876
254 RISK MANAGEMENT INFORMATION - SOFTWARE PILOT PROGRAM..	13,703	13,703
NAVY NEXT GENERATION ENTERPRISE NETWORK (NGEN) -		
255 SOFTWARE PILOT PROGRAM.....	955,151	---
MARITIME TACTICAL COMMAND AND CONTROL (MTC2) -		
256 SOFTWARE PILOT PROGRAM.....	14,855	14,855
TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, NAVY.....	22,639,362	22,139,080

118H

**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
**[In thousands of dollars]**

R-1	Budget Request	Final Bill
<b>1 UNIVERSITY RESEARCH INITIATIVES</b>	<b>117,448</b>	<b>174,898</b>
Program increase - university research initiatives		10,000
Program increase - defense university research instrumentation program		35,000
Project increase - coastal adaptation research for improved coastal community and NWS Earle military installation resilience		450
Program increase - biocoherent energy transfer research		4,000
Program increase - Navy aircraft fleet readiness and sustainment		8,000
<b>3 DEFENSE RESEARCH SCIENCES</b>	<b>484,421</b>	<b>523,421</b>
Program increase - silicon-germanium-tin alloy research		5,000
Program increase - bio-inspired engineering and design for naval applications		3,000
Program increase - generally-capable robotics for naval operations		4,000
Program increase - multifunctional structural batteries		2,000
Program increase - basic research		25,000
<b>4 POWER PROJECTION APPLIED RESEARCH</b>	<b>23,013</b>	<b>43,013</b>
Program increase - manufacturing of high temperature hypersonic materials		8,000
Program increase - miniaturization of lasers		4,000
Program increase - multi-mission UAV-borne electronic attack		8,000
<b>5 FORCE PROTECTION APPLIED RESEARCH</b>	<b>122,888</b>	<b>222,388</b>
Program increase - direct air capture and blue carbon removal technology		10,000
Program increase - talent and technology for Navy power and energy systems		10,500
Program increase - advanced energetics research		3,000
Program increase - coastal environmental research		5,000
Program increase - relative positioning of autonomous platforms		3,000
Program increase - additive manufacturing of unmanned maritime systems		6,000
Program increase - bonded metal matrix composite repair		5,000
Program increase - energy resilience		7,000
Program increase - Navy alternative energy research		27,500
Program increase - resilient innovative sustainable economies via university partnerships		7,500
Program increase - titanium metal and wire domestic production demonstration		15,000
<b>6 MARINE CORPS LANDING FORCE TECHNOLOGY</b>	<b>51,112</b>	<b>64,112</b>
Program increase - unmanned logistics solutions		7,500
Program increase - 5G biometric installation access control demonstration		4,000
Program increase - Marine Corps asset life-cycle management		1,500

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R-1	Budget Request	Final Bill
<b>8 WARFIGHTER SUSTAINMENT APPLIED RESEARCH</b>	<b>70,547</b>	<b>117,738</b>
Biocentric technologies previously funded		-1,059
Program increase - health and safety research of underground fuel storage facilities		5,000
Program increase - advanced nanocomposite coatings		6,000
Program increase - anticorrosion nanotechnology		7,500
Program increase - development of chromate-free corrosion inhibitor coatings for marine applications		1,750
Program increase - engineered systems to preserve and restore hearing		5,000
Program increase - human digital twin		3,000
Program increase - hypersonics materials acceleration		5,000
Program increase - polymer coatings for reduced ice and fouling adhesion		5,000
Program increase - high mobility ground robots to assist dismounted infantry in urban operations		5,000
Program increase - physics based neutralization of threats to human tissues and organs		5,000
<b>9 ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH</b>	<b>85,157</b>	<b>91,157</b>
Program increase - dark swarm in degraded environments		6,000
<b>10 OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH</b>	<b>70,086</b>	<b>103,586</b>
Program increase - task force ocean		10,000
Program increase - climate change hydraulic modeling risk analysis		1,500
Program increase - continuous distributed sensing systems		5,000
Program increase - research vessel cyber infrastructure improvements		4,000
Program increase - ocean acoustics		8,000
Program increase - operational demonstrations of commercially available, long endurance USV		5,000
<b>12 UNDERSEA WARFARE APPLIED RESEARCH</b>	<b>57,484</b>	<b>107,734</b>
Program increase - academic partnerships for innovative submarine and undersea vehicle research		25,000
Program increase - energetics global awareness		2,000
Program increase - undersea sensing and communications		4,000
Program increase - bomb technicians training innovations		2,250
Program increase - persistent maritime surveillance		10,000
Program increase - resident autonomous undersea robotics		7,000
<b>13 FUTURE NAVAL CAPABILITIES APPLIED RESEARCH</b>	<b>173,356</b>	<b>198,233</b>
Ocean battlespace sensing early prototyping		-2,123
Program increase - improved detection of submarine threats		5,000
Program increase - long endurance, autonomous, mobile acoustic detection systems		22,000
<b>14 MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH</b>	<b>32,160</b>	<b>42,160</b>
Program increase - human fusions tech for EOD robot applications		10,000
<b>15 INNOVATIVE NAVAL PROTOTYPES (INP) APPLIED RESEARCH</b>	<b>152,976</b>	<b>155,976</b>
Program increase - accelerate proliferated LEO narrowband capability		3,000

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R-1	Budget Request	Final Bill
<b>17 FORCE PROTECTION ADVANCED TECHNOLOGY</b>	<b>21,661</b>	<b>36,161</b>
Program increase - power electronics building block		6,000
Program increase - carbon nanotube energy storage flywheel		4,000
Program increase - laser peening of jet engines		4,500
<b>18 ELECTROMAGNETIC SYSTEMS ADVANCED TECHNOLOGY</b>	<b>8,146</b>	<b>12,146</b>
Program increase - advanced machine learning and artificial intelligence		4,000
<b>19 USMC ADVANCED TECHNOLOGY DEMONSTRATION</b>	<b>224,155</b>	<b>291,791</b>
Command, control, communications, computers failure to comply with congressional direction		-3,859
Force protection previously funded		-1,605
Program increase - expeditionary process, exploitation and dissemination		4,000
Program increase - advanced mission planning system SBIR technology insertion		5,000
Program increase - data analysis and sharing augmentation		2,000
Program increase - low-cost attritable aircraft technology		25,000
Program increase - adaptive future force		8,000
Program increase - AI-powered tactical ISR		5,100
Program increase - expeditionary mission support		10,000
Program increase - platform agnostic weapons system		5,000
Program increase - stand-off security inspection and surveillance system		9,000
<b>21 FUTURE NAVAL CAPABILITIES ADVANCED TECHNOLOGY DEVELOPMENT</b>	<b>265,299</b>	<b>282,237</b>
Information warfare excess growth		-4,594
Surface warfare excess growth		-3,114
Undersea warfare excess growth		-3,354
Program increase - advanced energetics research		3,000
Program increase - advanced lidar sensor and data processing		2,000
Program increase - electronic maneuver warfare unmanned sensors		14,000
Program increase - advanced machine learning and artificial intelligence		9,000
<b>22 MANUFACTURING TECHNOLOGY PROGRAM</b>	<b>57,236</b>	<b>77,236</b>
Program increase - energetics processing		5,000
Program increase - chemical reactor and crystallizer technology		15,000
<b>23 WARFIGHTER PROTECTION ADVANCED TECH</b>	<b>4,935</b>	<b>40,435</b>
Program increase - bone marrow registry program		26,500
Program increase - warfighter resilience and readiness		4,000
Program increase - dynamic modular manufacturing		5,000
<b>24 NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS</b>	<b>47,167</b>	<b>60,167</b>
Program increase - naval tech bridges		5,000
Program increase - ONR-Scout		8,000

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R-1	Budget Request	Final Bill
<b>26 INNOVATIVE NAVAL PROTOTYPES (INP) ADVANCED TECHNOLOGY DEVELOPMENT</b>	<b>133,779</b>	<b>156,613</b>
Manufacture of autonomous systems at scale concurrency		-2,491
Deployment and employment of autonomous long-range systems concurrency		-3,986
Manned and autonomous teams concurrency		-2,989
Program increase - high speed laser cooling systems		6,000
Program increase - energetics renaissance		10,000
Program increase - advanced ATRT SBIR enterprise capabilities		16,300
<b>27 UNMANNED AERIAL SYSTEM</b>	<b>16,879</b>	<b>16,167</b>
Test funds early to need		-712
<b>28 LARGE UNMANNED SURFACE VEHICLES (LUSV)</b>	<b>144,846</b>	<b>102,846</b>
LUSV integrated combat system early to need		-42,000
<b>30 AVIATION SURVIVABILITY</b>	<b>16,815</b>	<b>24,815</b>
Program increase - context-based augmented reality identification framework		8,000
<b>33 ASW SYSTEMS DEVELOPMENT</b>	<b>17,612</b>	<b>20,612</b>
Program increase - innovative AWS technologies		3,000
<b>35 ADVANCED COMBAT SYSTEMS TECHNOLOGY</b>	<b>32,310</b>	<b>35,310</b>
Program increase - Minotaur data dissemination and interoperability		3,000
<b>36 SURFACE AND SHALLOW WATER MINE COUNTERMEASURES</b>	<b>58,013</b>	<b>53,391</b>
Barracuda schedule delays		-4,622
<b>37 SURFACE SHIP TORPEDO DEFENSE</b>	<b>1,862</b>	<b>8,862</b>
Program increase - SLQ-25 capability improvements		3,000
Program increase - surface ship torpedo defense towed decoys		4,000
<b>46 SHIP CONCEPT ADVANCED DESIGN</b>	<b>111,590</b>	<b>126,618</b>
Project 3376 sealift concept development previously funded		-402
Next generation medium logistics ship industry studies and design contract award delay		-1,000
Next generation medium logistics ship special studies excess to need		-2,500
Project 4045 prior year execution baseline adjustment		-3,070
Program increase - metallic additive manufacturing		5,000
Program increase - critical protection technology for cybersecurity engineering		7,000
Program increase - polymorphic build farm for open source technologies		10,000
<b>47 SHIP PRELIMINARY DESIGN &amp; FEASIBILITY STUDIES</b>	<b>106,957</b>	<b>40,787</b>
Project 0411 design and analysis and program management growth early to need		-71,170
Program increase - preliminary ship design of next-gen hospital ship		5,000

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R-1	Budget Request	Final Bill
<b>49 ADVANCED SURFACE MACHINERY SYSTEMS</b>	<b>78,122</b>	<b>76,922</b>
Project 2471 power and energy systems product development prior year carryover		-500
Project 2471 DDG(X) power and propulsion risk mitigation and demonstration excess to need		-12,700
Program increase - silicon carbide power modules		10,000
Program increase - solid state circuit breaker development		2,000
<b>51 LITTORAL COMBAT SHIP</b>	<b>84,924</b>	<b>82,518</b>
Historical underexecution		-2,406
<b>53 OHIO REPLACEMENT</b>	<b>296,231</b>	<b>311,231</b>
Program increase - Columbia digital environment		5,000
Program increase - rapid composites for wet submarine application		10,000
<b>55 AUTOMATED TEST AND RE-TEST (ATRT)</b>	<b>7,805</b>	<b>37,805</b>
Program increase		30,000
<b>56 FRIGATE DEVELOPMENT</b>	<b>109,459</b>	<b>100,203</b>
Test and evaluation delays		-4,256
FORGE software factory acquisition strategy		-5,000
<b>58 MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM</b>	<b>77,065</b>	<b>66,565</b>
Armored reconnaissance vehicle GFE excess to need		-4,400
ARV change to Marine Corps acquisition strategy		-6,100
<b>62 NAVY ENERGY PROGRAM</b>	<b>33,824</b>	<b>57,824</b>
Battery development and safety unjustified request		-1,500
Program increase - Navy energy program		15,000
Program increase - marine energy systems for sensors and microgrids		10,500
<b>67 LINK PLUMERIA</b>	<b>692,280</b>	<b>663,780</b>
Classified adjustment		-28,500
<b>69 LINK EVERGREEN</b>	<b>221,253</b>	<b>264,453</b>
Classified adjustment		43,200
<b>73 JOINT NON-LETHAL WEAPONS TESTING</b>	<b>29,589</b>	<b>28,168</b>
Vessel stopping prototype schedule delays		-1,421
<b>74 JOINT PRECISION APPROACH AND LANDING SYSTEMS - DEM/VAL</b>	<b>24,450</b>	<b>22,950</b>
LANTERNS concurrency		-1,500
<b>78 SMALL AND MEDIUM UNMANNED UNDERSEA VEHICLES</b>	<b>84,676</b>	<b>79,947</b>
Project 2482 lionfish test assets excess to need		-4,729
<b>79 UNMANNED UNDERSEA VEHICLE CORE TECHNOLOGIES</b>	<b>59,299</b>	<b>66,137</b>
Project 3393 RAIL software factory acquisition strategy		-3,162
Program increase - clandestine mine neutralization technologies		10,000

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R-1	Budget Request	Final Bill
<b>81 LARGE UNMANNED UNDERSEA VEHICLES</b>	<b>88,063</b>	<b>66,651</b>
Phase 2 contract award delay		-21,412
<b>83 LITTORAL AIRBORNE MCM</b>	<b>18,669</b>	<b>18,669</b>
Project 2131 transfer COBRA Block II to Block I upgrades only		-7,626
Project 2131 transfer from COBRA Block II to Block 1 upgrades only		7,626
<b>84 SURFACE MINE COUNTERMEASURES</b>	<b>13,655</b>	<b>12,507</b>
Project 1235 product development previously funded		-1,148
<b>86 NEXT GENERATION LOGISTICS</b>	<b>1,071</b>	<b>8,071</b>
Program increase - hydrogen fuel cell technology		2,000
Program increase - predictive maintenance for Navy and Marine Corps weapons systems		5,000
<b>87 FUTURE VERTICAL LIFT (MARITIME STRIKE)</b>	<b>9,825</b>	<b>8,274</b>
Contract award delay		-1,551
<b>88 RAPID TECHNOLOGY CAPABILITY PROTOTYPE</b>	<b>6,555</b>	<b>11,555</b>
Program increase - rapid technology capability prototyping		5,000
<b>90 ADVANCED UNDERSEA PROTOTYPING</b>	<b>58,473</b>	<b>31,668</b>
Test and evaluation excess to need		-10,707
ORCA payload capacity increase		-8,908
Development and testing of universal payload module		-7,190
<b>92 PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM</b>	<b>97,944</b>	<b>90,694</b>
Miniature air launched decoy delays		-12,250
Advanced aerial refueling system test and evaluation early to need		-1,000
Program increase - neutron radiography techniques for energetic devices		6,000
<b>94 OFFENSIVE ANTI-SURFACE WARFARE WEAPON</b>	<b>127,756</b>	<b>70,792</b>
Project 3343 lack of program justification		-56,964
<b>96 UNMANNED SURFACE VEHICLE ENABLING CAPABILITIES</b>	<b>170,838</b>	<b>120,138</b>
USV machinery qualification unjustified request		-25,000
Unmanned communications excess growth		-15,200
Elevated sensors excess growth		-5,500
RAIL software factory acquisition strategy		-5,000
<b>99 CONVENTIONAL PROMPT STRIKE (CPS)</b>	<b>1,372,340</b>	<b>1,324,051</b>
Virginia class submarine integration early to need		-31,050
Industrial base capacity expansion funding early to need		-22,239
Program increase - cross-service hypersonic testing capabilities through advanced concepts technology evaluation		5,000

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R-1	Budget Request	Final Bill
<b>101 ADVANCED TACTICAL UNMANNED AIRCRAFT SYSTEM</b>	<b>16,204</b>	<b>36,204</b>
MUX studies, analysis, and concept refinement unjustified growth		-2,000
Program increase - K-max unmanned logistics system		7,000
Program increase - mobile unmanned/manned distributed lethality airborne network joint capability technology demonstration		5,000
Program increase - group 3 advanced autonomous systems		5,000
Program increase - MQ-9 multi-mode radar pod		5,000
<b>104 OTHER HELO DEVELOPMENT</b>	<b>56,444</b>	<b>49,312</b>
Attack and utility replacement aircraft excess studies and analysis		-7,132
<b>107 MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT</b>	<b>46,418</b>	<b>54,418</b>
Program increase - MH-60 capability upgrades		8,000
<b>109 WARFARE SUPPORT SYSTEM</b>	<b>10,167</b>	<b>13,167</b>
Program increase - operational deployment of diesel-fueled outboard marine motors		3,000
<b>111 ADVANCED HAWKEYE</b>	<b>386,860</b>	<b>348,360</b>
DSCC6 excess growth		-40,000
Non-DSSC efforts unjustified growth except test asset viability		-18,500
Program increase - radar modernization and testing		20,000
<b>113 ACOUSTIC SEARCH SENSORS</b>	<b>46,066</b>	<b>49,057</b>
Studies and analysis delays		-2,009
Program increase - sonobuoy capabilities research		5,000
<b>114 V-22A</b>	<b>107,984</b>	<b>105,729</b>
Project 3090 flight control system redesign contract award delay		-6,505
Program increase - V-22 oil coolers		4,250
<b>115 AIR CREW SYSTEMS DEVELOPMENT</b>	<b>22,746</b>	<b>20,746</b>
Enhanced visual acuity schedule delays		-2,000
<b>116 EA-18</b>	<b>68,425</b>	<b>59,674</b>
Historical underexecution		-8,751
<b>117 ELECTRONIC WARFARE DEVELOPMENT</b>	<b>139,535</b>	<b>136,593</b>
Dual band decoy previously funded		-2,942
<b>118 EXECUTIVE HELO DEVELOPMENT</b>	<b>45,932</b>	<b>41,847</b>
VH-92A improvements test and evaluation delay		-4,085
<b>119 NEXT GENERATION JAMMER (NGJ)</b>	<b>243,923</b>	<b>235,407</b>
Test and evaluation delays		-8,516
<b>121 NEXT GENERATION JAMMER (NGJ) INCREMENT II</b>	<b>248,096</b>	<b>146,596</b>
Program delay		-101,500

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R-1	Budget Request	Final Bill
<b>122 SURFACE COMBATANT COMBAT SYSTEM ENGINEERING</b>	<b>371,575</b>	<b>331,820</b>
Aegis capability build 2023 previously funded		-1,764
Baseline program adjustment		-23,711
FORGE software factory acquisition strategy		-14,280
<b>124 SMALL DIAMETER BOMB (SDB)</b>	<b>46,769</b>	<b>40,852</b>
BRU-61 contract delay		-5,917
<b>127 NAVAL INTEGRATED FIRE CONTROL - COUNTER AIR SYSTEMS ENGINEERING</b>	<b>46,121</b>	<b>50,233</b>
Historical underexecution		-2,388
Program increase - stratospheric balloons		6,500
<b>128 ADVANCED SENSORS APPLICATION PROGRAM (ASAP)</b>	<b>0</b>	<b>10,000</b>
Program increase		10,000
<b>129 ADVANCED ABOVE WATER SENSORS</b>	<b>77,852</b>	<b>62,185</b>
Shipboard passive electro-optical infrared development excess to need		-15,667
<b>134 AIR AND MISSILE DEFENSE RADAR (AMDR) SYSTEM</b>	<b>96,556</b>	<b>87,520</b>
Engineering changes/capability enhancements and backfit delays		-9,036
<b>136 NEW DESIGN SSN</b>	<b>503,252</b>	<b>486,938</b>
Payload NRE excess to need		-16,314
<b>140 MINE DEVELOPMENT</b>	<b>76,027</b>	<b>37,944</b>
Encapsulated effector contract delays		-19,363
Project 0267 - Quickstrike-ER contract award delays		-18,720
<b>146 SHIP SELF DEFENSE (DETECT &amp; CONTROL)</b>	<b>149,433</b>	<b>142,595</b>
Historical underexecution		-1,838
FORGE software factory acquisition strategy		-5,000
<b>147 SHIP SELF DEFENSE (ENGAGE: HARD KILL)</b>	<b>87,862</b>	<b>107,488</b>
Project 0173 MK9 CWTI replacement delay		-3,374
Program increase - ALaMO block 1 projectile		23,000
<b>148 SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)</b>	<b>69,006</b>	<b>65,460</b>
Project 3068 concurrency		-3,546
<b>150 MEDICAL DEVELOPMENT</b>	<b>3,967</b>	<b>31,467</b>
Program increase - autonomous aerial technology for distributed logistics		7,500
Program increase - wound care research		10,000
Program increase - military dental research		10,000
<b>151 NAVIGATION/ID SYSTEM</b>	<b>48,837</b>	<b>50,037</b>
Program increase - Navy micro interrogator		1,200

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	Budget Request	Final Bill
<b>156 INFORMATION TECHNOLOGY DEVELOPMENT</b>	<b>243,828</b>	<b>271,085</b>
Navy shore manpower requirements determination unjustified request		-2,958
Electronic procurement system delays		-3,936
Transfer from line 255		2,151
Program increase - aviation innovative cyber solutions		9,000
Program increase - cyber solutions in classified environments		6,000
Program increase - warfare mission analysis in cyber contested environment		5,000
Program increase - product lifecycle management for naval aviation		2,000
Program increase - actionable analytics for reliable maintenance		4,000
Program increase - advanced shipyard technologies		6,000
<b>158 TACAMO MODERNIZATION</b>	<b>150,592</b>	<b>50,592</b>
Air vehicle lack of full funding		-60,100
New start delays		-39,900
<b>164 UNMANNED CARRIER AVIATION (UCA)</b>	<b>268,937</b>	<b>261,992</b>
ESA excess to need		-4,695
Training development early to need		-2,250
<b>167 MULTI-MISSION MARITIME (MMA) INCREMENT III</b>	<b>173,784</b>	<b>162,884</b>
ECP 6 unjustified growth		-10,900
<b>168 MARINE CORPS ASSAULT VEHICLES SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>	<b>80,709</b>	<b>73,709</b>
System design and development excess growth		-7,000
<b>175 CYBER OPERATIONS TECHNOLOGY DEVELOPMENT</b>	<b>26,318</b>	<b>23,768</b>
Historical underexecution		-2,550
<b>176 THREAT SIMULATOR DEVELOPMENT</b>	<b>20,862</b>	<b>57,962</b>
Program increase - C-band and S-band emulator upgrade for test infrastructure		37,100
<b>177 TARGET SYSTEMS DEVELOPMENT</b>	<b>12,113</b>	<b>20,113</b>
Program increase - lab and test range upgrades - targets		8,000
<b>178 MAJOR T&amp;E INVESTMENT</b>	<b>84,617</b>	<b>105,617</b>
Program increase - cargo drone family of advanced batteries		9,000
Program increase - lab and test range upgrades - targets		12,000
<b>184 MANAGEMENT, TECHNICAL &amp; INTERNATIONAL SUPPORT</b>	<b>93,966</b>	<b>108,966</b>
Program increase - consortium for additive manufacturing research and education		15,000
<b>187 TEST AND EVALUATION SUPPORT</b>	<b>429,277</b>	<b>446,277</b>
Program increase - future workforce innovation		1,000
Program increase - lab and test range upgrades - targets		16,000
<b>191 MARINE CORPS PROGRAM WIDE SUPPORT</b>	<b>47,042</b>	<b>43,524</b>
Project 3009 excess growth		-3,518

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R-1	Budget Request	Final Bill
<b>201 MARINE CORPS AIR DEFENSE WEAPONS SYSTEMS (MARFORRES)</b>	<b>65,381</b>	<b>61,381</b>
Project 2278 MADIS Inc 2 early to need		-4,000
<b>202 COOPERATIVE ENGAGEMENT CAPABILITY (CEC)</b>	<b>176,486</b>	<b>162,676</b>
FIRECAP new start phasing		-5,007
ELEKTRA excess growth		-8,803
<b>203 STRATEGIC SUB &amp; WEAPONS SYSTEM SUPPORT</b>	<b>177,098</b>	<b>186,998</b>
D5LE2 integration and test early to need		-2,100
D5LE2 growth without acquisition strategy		-20,000
Program increase - next generation strategic inertial measurement unit		6,000
Program increase - autonomous fiber optic sensing network		5,000
Program increase - scalable very high temperature composite manufacturing		6,000
Program increase - strategic weapons systems shipboard navigation system modernization		15,000
<b>205 SUBMARINE ACOUSTIC WARFARE DEVELOPMENT</b>	<b>64,752</b>	<b>59,752</b>
Compact rapid attack weapon concurrency		-5,000
<b>207 F/A-18 SQUADRONS</b>	<b>189,224</b>	<b>219,224</b>
Program increase - civil instrument landing system		3,000
Program increase - noise reduction research		4,000
Program increase - solid state light-off detector		8,000
Program increase - neural network algorithms on advanced processors		5,000
Program increase - training technology		10,000
<b>213 GROUND/AIR TASK ORIENTED RADAR (G/ATOR)</b>	<b>21,367</b>	<b>45,367</b>
Program increase - AN/TPS-80 G/ATOR naval integrated fire control		12,000
Program increase - AN/TPS-80 G/ATOR radar signal processor refresh		12,000
<b>214 CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT</b>	<b>56,741</b>	<b>52,741</b>
Fleet training wholeness prior year carryover		-2,000
CIAT to SEA prior year carryover		-2,000
<b>215 ELECTRONIC WARFARE (EW) READINESS SUPPORT</b>	<b>62,006</b>	<b>55,528</b>
Project 3426 unjustified growth		-6,478
<b>216 ANTI-RADIATION MISSILE IMPROVEMENT</b>	<b>133,520</b>	<b>138,520</b>
Program increase - Advanced Anti-Radiation Guided Missile (AARGM) and the Extended Range (ER)		5,000
<b>218 MK-48 ADCAP</b>	<b>114,492</b>	<b>100,759</b>
ABP 7 phasing new start		-2,708
TI-2 phasing new start		-11,025
<b>219 AVIATION IMPROVEMENTS</b>	<b>132,486</b>	<b>144,621</b>
Historical underexecution		-4,865
Program increase - additive manufacturing for metals affordability		7,000
Program increase - FOD mitigation integration		10,000

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R-1	Budget Request	Final Bill
<b>221 MARINE CORPS COMMUNICATIONS SYSTEMS</b>	<b>89,897</b>	<b>108,897</b>
Project 3772 SIGMAN unjustified request		-1,000
Program increase - multi-function electronic warfare		20,000
<b>222 COMMON AVIATION COMMAND AND CONTROL SYSTEM (CAC2S)</b>	<b>9,324</b>	<b>12,869</b>
Program increase - common aviation command and control system naval integrated fire control		3,545
<b>223 MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS</b>	<b>108,235</b>	<b>103,810</b>
Project 2315 force on force training systems unjustified growth		-3,354
Project 2503 family of expeditionary fuel systems delay		-1,071
<b>224 MARINE CORPS COMBAT SERVICES SUPPORT</b>	<b>13,185</b>	<b>21,185</b>
Program increase - field-based airborne power generation systems		8,000
<b>234 AFLOAT NETWORKS</b>	<b>30,890</b>	<b>36,890</b>
Program increase - kubernetes-based geospatial analytics and visualization		6,000
<b>238 UAS INTEGRATION AND INTEROPERABILITY</b>	<b>9,797</b>	<b>5,000</b>
Excess to need		-4,797
<b>239 DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS</b>	<b>38,800</b>	<b>29,749</b>
DCGS-MC GEOINT concurrency		-3,016
DCGS-MC all-source concurrency		-6,035
<b>241 MQ-8 UAV</b>	<b>26,543</b>	<b>33,543</b>
Program increase - data bus cybersecurity		7,000
<b>251 DEPOT MAINTENANCE (NON-IF)</b>	<b>36,880</b>	<b>50,030</b>
EA-18G SLAP previously funded		-1,850
Program increase - high pressure cold spray		10,000
Program increase - joint enterprise data interoperability for F-35 depots		5,000
<b>252 MARITIME TECHNOLOGY (MARITECH)</b>	<b>3,329</b>	<b>6,329</b>
Program increase - maritime technology to mitigate IoT/ICS security vulnerabilities		3,000
<b>999 CLASSIFIED PROGRAMS</b>	<b>1,872,586</b>	<b>2,093,876</b>
Classified adjustment		221,290
<b>255 NAVY NEXT GENERATION ENTERPRISE NETWORK (NGEN) - SOFTWARE PILOT PROGRAM</b>	<b>955,151</b>	<b>0</b>
Transfer to OM,N line BSIT		-778,000
Transfer to OP,N line 141		-175,000
Transfer to line 156		-2,151

1185

## SOFTWARE FACTORIES

The fiscal year 2022 President's budget request includes \$72,760,000 to establish no less than three "software factories" that would provide a software pipeline for continuous development, integration, deployment, and upgrades of software into multiple unmanned and manned undersea and surface Navy programs. It is believed that establishing such a capability is necessary. However, the lack of coordination and potential for duplication of efforts among various elements of the Navy's acquisition enterprise, as well as the Navy's apparent over-reliance on commercial industry for certain oversight and program management functions, is concerning.

The Assistant Secretary of the Navy (Research, Development and Acquisition) is directed to review the Navy's plans for software factories across the enterprise. Further, with submission of the fiscal year 2023 President's budget request, the Assistant Secretary of the Navy (Research, Development and Acquisition) is directed to provide to the congressional defense committees an analysis and recommendation of inherently governmental versus commercial industry roles with regard to software and autonomous intelligence development, integration, and operation for Navy programs; as well as an assessment of the current Navy workforce and, if required, a strategy for developing and retaining the required Navy workforce.

## SELF-DEFENSE TEST SHIP

The fiscal year 2022 President's budget request includes \$15,061,000 in program element 0605863N primarily to operate and maintain the Ex-PAUL F. FOSTER, the Navy's Self-Defense Test Ship (SDTS). It is noted that the Navy has operated a SDTS since 1996 to conduct operationally realistic testing that is otherwise prohibited on manned ships. Further, it is understood that the current SDTS is projected to no longer be in a ready state beyond fiscal year 2025, and that the Navy is evaluating several courses

of action to meet the requirement for an SDTS going forward, including the conversion of a decommissioned Navy asset. The Director of Navy Innovation, Technology Requirements, and Test and Evaluation is directed to submit to the congressional defense committees, with submission of the fiscal year 2023 President's budget request, the Navy's strategy for the SDTS beyond fiscal year 2025, to include an evaluation of different courses of action under consideration and their associated funding requirements by fiscal year across the future years defense program.

Further, the Director of Operational Test and Evaluation (DOTE) is directed to provide DOTE's assessment of the Navy's strategy with respect to impacts on approved Test and Evaluation Master Plans and test strategies for Navy acquisition program to the congressional defense committees not later than 30 days after submission of the fiscal year 2023 President's budget request.

#### LARGE DISPLACEMENT UNMANNED UNDERSEA VEHICLE

The fiscal year 2022 President's budget request includes \$29,080,000 for Phase II of the Large Displacement Unmanned Undersea Vehicle (LDUUV), which is the planned transition to industry of the previously funded Phase I design for the fabrication of no less than one additional LDUUV. It is noted that, with submission of the fiscal year 2022 President's budget request, the Navy terminated the Payload Handling System, which was intended to launch LDUUV from a VIRGINIA Class submarine, thereby limiting LDUUV deployment opportunities. It is further noted that the Navy has delayed the Phase II contract award from fiscal year 2021 into fiscal year 2022, and that the Navy is reconsidering the LDUUV program. Therefore, unobligated fiscal year 2021 funds appropriated for LDUUV, as well as fiscal year 2022 Phase I and Phase II funds are designated as congressional special interest items for the purpose of the Base for Reprogramming (DD Form 1414).

#### EXTRA LARGE UNMANNED UNDERSEA VEHICLE

The fiscal year 2022 President's budget request includes \$58,173,000 to continue manufacturing and testing of five Extra Large Unmanned Undersea Vehicles (XLUUV). With submission of the budget request, the Navy informed the congressional defense committees of schedule delays of no less than two fiscal quarters in addition to an 18-month delay revealed with the fiscal year 2021 President's budget request. Further, the Navy notified that the program is being restructured. It is concerning therefore, that, with the fiscal year 2022 request, the Navy requested funds for additional XLUUV requirements such as an increased payload capacity and a new payload module, when the baseline program is performing poorly. The agreement includes no funds to increase payload capacity or for the universal payload in fiscal year 2022, a reduction of \$8,908,000 and \$7,190,000 to the request, respectively.

It is noted that the XLUUV program was awarded in response to a Joint Emergent Operational Need using rapid acquisition authorities. Given the urgency of the requirement, the Navy's analytical and engineering rigor conducted prior to program initiation is questioned. The Comptroller General is directed to review the Navy's adherence to acquisition best practices for the XLUUV program, as adapted for rapid acquisition programs, and report to the congressional defense committees not later than 90 days after enactment of this Act.

#### BASING OF UNMANNED UNDERSEA VEHICLES

The Secretary of the Navy is directed to provide to the congressional defense committees, with submission of the fiscal year 2023 President's budget request, a report detailing the Navy's plans for basing Navy unmanned undersea vehicles (UUVs), to include the infrastructure, personnel, and logistical requirements for testing, evaluation, docking, and maintenance of UUVs.



## CH-53K SYSTEM DEMONSTRATION TEST ARTICLE AIRCRAFT

The Assistant Secretary of the Navy (Research, Development and Acquisition) and the Assistant Secretary of the Navy (Financial Management and Comptroller) are directed to continue to comply with the direction contained in Senate Report 116-103 regarding System Demonstration Test Article aircraft for the CH-53K program.

## ACADEMIC PARTNERSHIPS FOR INNOVATIVE SUBMARINE AND UNDERSEA VEHICLE RESEARCH

The agreement includes \$25,000,000 to build stronger partnerships between Navy research labs, warfighters, academia, and industry. The Assistant Secretary of the Navy (Research, Development and Acquisition) is directed to coordinate this effort with the Navy's industrial base partners to ensure that funded academic research projects are relevant to specific research, engineering, and manufacturing needs, as well as defined systems capabilities. The Assistant Secretary of the Navy (Research, Development, and Acquisition) is further directed to ensure that partnerships with academia focus on the specific submarine and autonomous undersea vehicle research needs, undersea technology acceleration and transition, and workforce development to ensure a sustainable undersea industrial base. Projects funded under this initiative should also focus on leveraging investments across the public and private sectors in dual use technology areas through collaborative efforts aligning the undersea ecosystem.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, AIR FORCE

The agreement provides \$41,592,913,000 for Research, Development, Test and Evaluation, Air Force, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT (123A-R)

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
RESEARCH, DEVELOPMENT, TEST & EVALUATION, AIR FORCE		
1	BASIC RESEARCH DEFENSE RESEARCH SCIENCES.....	328,303 353,303
2	UNIVERSITY RESEARCH INITIATIVES.....	162,403 187,403
	TOTAL, BASIC RESEARCH.....	490,706 540,706
APPLIED RESEARCH		
4	FUTURE AF CAPABILITIES APPLIED RESEARCH.....	79,901 79,901
5	MATERIALS.....	113,460 220,960
6	AEROSPACE VEHICLE TECHNOLOGIES.....	163,032 183,032
7	HUMAN EFFECTIVENESS APPLIED RESEARCH.....	136,273 156,863
8	AEROSPACE PROPULSION.....	174,683 190,683
9	AEROSPACE SENSORS.....	193,514 255,918
11	SCIENCE AND TECHNOLOGY MANAGEMENT - MAJOR HEADQUARTERS	8,891 8,891
12	CONVENTIONAL MUNITIONS.....	151,757 151,757
13	DIRECTED ENERGY TECHNOLOGY.....	121,869 116,456
14	DOMINANT INFORMATION SCIENCES AND METHODS.....	169,110 221,110
	TOTAL, APPLIED RESEARCH.....	1,312,490 1,585,571
ADVANCED TECHNOLOGY DEVELOPMENT		
17	FUTURE AF INTEGRATED TECHNOLOGY DEMOS.....	131,643 112,643
18	ADVANCED MATERIALS FOR WEAPON SYSTEMS.....	31,905 63,378
19	SUSTAINMENT SCIENCE AND TECHNOLOGY (S&T).....	21,057 19,112
20	ADVANCED AEROSPACE SENSORS.....	44,730 53,750
21	AEROSPACE TECHNOLOGY DEV/DEMO.....	70,486 105,486
22	AEROSPACE PROPULSION AND POWER TECHNOLOGY.....	75,273 110,273
23	ELECTRONIC COMBAT TECHNOLOGY.....	46,591 44,938
26	HUMAN EFFECTIVENESS ADVANCED TECHNOLOGY DEVELOPMENT...	24,589 23,459
27	CONVENTIONAL WEAPONS TECHNOLOGY.....	157,423 155,306
28	ADVANCED WEAPONS TECHNOLOGY.....	28,258 31,855
29	MANUFACTURING TECHNOLOGY PROGRAM.....	45,259 176,200
30	BATTLESPACE KNOWLEDGE DEVELOPMENT & DEMONSTRATION.....	56,772 72,138
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT.....	733,986 968,538

123A

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
31	ADVANCED COMPONENT DEVELOPMENT INTELLIGENCE ADVANCED DEVELOPMENT.....	5,795 5,795
32	COMBAT IDENTIFICATION TECHNOLOGY.....	21,939 21,939
33	NATO RESEARCH AND DEVELOPMENT.....	4,114 4,114
34	INTERCONTINENTAL BALLISTIC MISSILE - DEM/VAL.....	49,621 76,621
36	NC3 ADVANCED CONCEPTS.....	6,900 6,900
37	AIR FORCE WEATHER SERVICES RESEARCH.....	986 3,855
38	ADVANCED BATTLE MANAGEMENT SYSTEM (ABMS).....	203,849 268,849
39	ADVANCED ENGINE DEVELOPMENT.....	123,712 583,712
40	ARCHITECTURE INITIATIVES.....	82,438 25,138
41	LONG RANGE STRIKE.....	2,872,624 2,872,624
42	DIRECTED ENERGY PROTOTYPING.....	10,820 15,820
43	HYPERSONICS PROTOTYPING.....	438,378 ---
43A	HYPERSONICS PROTOTYPING - AIR LAUNCHED RAPID RESPONSE WEAPON (ARRW).....	--- 318,687
43B	HYPERSONICS PROTOTYPING - HYPERSONIC ATTACK CRUISE MISSILE (HACM).....	--- 190,116
44	PNT RESILIENCY, MODS AND IMPROVEMENTS.....	39,742 39,742
45	ADVANCED TECHNOLOGY AND SENSORS.....	23,745 23,745
46	SURVIVABLE AIRBORNE OPERATIONS CENTER.....	133,253 95,788
47	TECHNOLOGY TRANSFER.....	15,768 56,768
48	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM.....	15,886 12,886
49	CYBER RESILIENCY OF WEAPON SYSTEMS-ACS.....	71,229 71,229
50	DEPLOYMENT AND DISTRIBUTION ENTERPRISE R&D.....	40,103 40,103
51	TECH TRANSITION PROGRAM.....	343,545 369,045
51A	OPERATIONAL ENERGY AND INSTALLATION RESILIENCE.....	--- 104,000
52	GROUND BASED STRATEGIC DETERRENT.....	2,553,541 2,553,541
54	NEXT GENERATION AIR DOMINANCE.....	1,524,667 1,524,667
56	AIRBASE AIR DEFENSE SYSTEMS (ABADS).....	10,905 10,905
57	WAR RESERVE MATERIEL - AMMUNITION.....	3,943 3,943
59	COMMON DATA LINK EXECUTIVE AGENT (CDL EA).....	43,881 43,881
61	MISSION PARTNER ENVIRONMENTS.....	16,420 16,420
62	CYBER OPERATIONS TECHNOLOGY SUPPORT.....	242,499 242,499
63	ENABLED CYBER ACTIVITIES.....	16,578 16,578
65	RAPID SUSTAINMENT MODERNIZATION (RSM).....	--- 55,000

123B

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
66 CONTRACTING INFORMATION TECHNOLOGY SYSTEM.....	20,343	20,343
TOTAL, ADVANCED COMPONENT DEVELOPMENT.....	8,937,224	9,695,253
SYSTEM DEVELOPMENT & DEMONSTRATION		
78 FUTURE ADVANCED WEAPON ANALYSIS & PROGRAMS.....	23,499	18,499
79 PNT RESILIENCY, MODS AND IMPROVEMENTS.....	167,520	163,520
80 NUCLEAR WEAPONS SUPPORT.....	30,050	30,050
81 ELECTRONIC WARFARE DEVELOPMENT.....	2,110	7,110
82 TACTICAL DATA NETWORKS ENTERPRISE.....	169,836	159,836
83 PHYSICAL SECURITY EQUIPMENT.....	8,469	8,469
85 ARMAMENT/ORDNANCE DEVELOPMENT.....	9,047	9,047
86 SUBMUNITIONS.....	2,954	2,954
87 AGILE COMBAT SUPPORT.....	16,603	27,938
89 LIFE SUPPORT SYSTEMS.....	25,437	25,437
90 COMBAT TRAINING RANGES.....	23,980	23,980
92 LONG RANGE STANDOFF WEAPON.....	609,042	599,042
93 ICBM FUZE MODERNIZATION.....	129,709	129,709
95 OPEN ARCHITECTURE MANAGEMENT.....	37,109	37,109
96 KC-46.....	1	---
97 ADVANCED PILOT TRAINING.....	188,898	188,898
98 COMBAT RESCUE HELICOPTER HH-60W.....	66,355	62,255
101 F-15 EPAWSS.....	112,012	112,012
102 STAND IN ATTACK WEAPON.....	166,570	166,570
103 FULL COMBAT MISSION TRAINING.....	7,064	12,064
105 KC-46A TANKER SQUADRONS.....	73,458	66,758
107 VC-25B.....	680,665	655,665
108 AUTOMATED TEST SYSTEMS.....	15,445	15,445
109 TRAINING DEVELOPMENTS.....	4,482	2,482
TOTAL, ENGINEERING & MANUFACTURING DEVELOPMENT.....	2,570,315	2,524,849
MANAGEMENT SUPPORT		
124 THREAT SIMULATOR DEVELOPMENT.....	41,909	46,909
125 MAJOR T&E INVESTMENT.....	130,766	130,766
126 RAND PROJECT AIR FORCE.....	36,017	36,017
128 INITIAL OPERATIONAL TEST & EVALUATION.....	12,582	12,582
129 TEST AND EVALUATION SUPPORT.....	811,032	811,032

123C

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
131 ACQ WORKFORCE- GLOBAL VIG & COMBAT SYS.....	243,796	267,919
132 ACQ WORKFORCE- GLOBAL REACH.....	435,930	429,659
133 ACQ WORKFORCE- CYBER, NETWORK, & BUS SYS.....	435,274	439,571
135 ACQ WORKFORCE- CAPABILITY INTEGRATION.....	243,806	263,014
136 ACQ WORKFORCE- ADVANCED PRGM TECHNOLOGY.....	103,041	62,755
137 ACQ WORKFORCE- NUCLEAR SYSTEMS.....	226,055	227,425
138 MANAGEMENT HQ - R&D.....	4,079	5,537
139 FACILITIES RESTORATION & MODERNIZATION - TEST & EVAL..	70,788	70,788
140 FACILITIES SUSTAINMENT - TEST AND EVALUATION SUPPORT..	30,057	30,057
141 REQUIREMENTS ANALYSIS AND MATURATION.....	85,799	90,799
142 MANAGEMENT HQ - T&E.....	6,163	6,163
143 SUPPORT TO INFORMATION OPERATIONS (IO) CAPABILITIES...	537	537
144 COMMAND, CONTROL, COMMUNICATION, AND COMPUTERS (C4) - STRATCOM.....	25,340	35,340
145 ENTERPRISE INFORMATION SERVICES (EIS).....	28,720	26,720
146 ACQUISITION AND MANAGEMENT SUPPORT.....	37,211	37,211
147 GENERAL SKILL TRAINING.....	1,506	1,506
148 TRAINING DEVELOPMENTS.....	2,957	2,957
150 INTERNATIONAL ACTIVITIES.....	2,420	2,420
156 SPACE TEST PROGRAM (STP).....	3	3
TOTAL, RDT&E MANAGEMENT SUPPORT.....	3,015,788	3,037,687
OPERATIONAL SYSTEMS DEVELOPMENT		
157 SPECIALIZED UNDERGRADUATE FLIGHT TRAINING.....	5,509	8,589
158 WIDE AREA SURVEILLANCE.....	2,760	2,760
160 F-35 C2D2.....	985,404	1,105,404
161 AF INTEGRATED PERSONNEL AND PAY SYSTEM (AF-IPPS).....	22,010	22,010
162 ANTI-TAMPER TECHNOLOGY EXECUTIVE AGENCY.....	51,492	51,492
163 FOREIGN MATERIEL ACQUISITION AND EXPLOITATION.....	71,391	71,391
164 HC/MC-130 RECAP RDT&E.....	46,796	46,796
165 NC3 INTEGRATION.....	26,532	26,532
167 B-52 SQUADRONS.....	715,811	646,811
168 AIR-LAUNCHED CRUISE MISSILE (ALCM).....	453	453
169 B-1B SQUADRONS.....	29,127	39,127
170 B-2 SQUADRONS.....	144,047	131,647

123D

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
171 MINUTEMAN SQUADRONS.....	113,622	113,622
172 WORLDWIDE JOINT STRATEGIC COMMUNICATIONS.....	15,202	15,202
174 ICBM REENTRY VEHICLES.....	96,313	96,313
176 UH-1N REPLACEMENT PROGRAM.....	16,132	16,132
177 REGION/SECTOR OPERATION CONTROL CENTER MODERNIZATION..	771	771
178 NORTH WARNING SYSTEM (NWS).....	99	99
179 OVER-THE-HORIZON BACKSCATTER RADAR.....	42,300	67,400
180 VEHICLES AND SUPPORT EQUIPMENT - GENERAL.....	5,889	5,889
181 MQ-9 UAV.....	85,135	79,121
182 JOINT COUNTER RCIED ELECTRONIC WARFARE.....	3,111	3,111
183 MULTI-PLATFORM ELECTRONIC WARFARE EQUIPMENT.....	36,607	36,607
184 A-10 SQUADRONS.....	39,224	34,224
185 F-16 SQUADRONS.....	224,573	225,573
186 F-15E SQUADRONS.....	239,616	239,616
187 MANNED DESTRUCTIVE SUPPRESSION.....	15,855	15,855
188 F-22 SQUADRONS.....	647,296	647,296
189 F-35 SQUADRONS.....	69,365	69,365
190 F-15EX.....	118,126	107,126
191 TACTICAL AIM MISSILES.....	32,974	32,974
192 ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM).....	51,288	51,288
193 COMBAT RESCUE - PARARESCUE.....	852	852
194 AF TENCAP.....	23,685	23,685
195 PRECISION ATTACK SYSTEMS PROCUREMENT.....	12,083	12,083
196 COMPASS CALL.....	91,266	91,266
197 AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM.....	103,715	115,715
198 JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM).....	117,325	117,325
199 SMALL DIAMETER BOMB (SDB).....	27,109	32,109
200 AIR AND SPACE OPERATIONS CENTER (AOC).....	3	90,027
201 CONTROL AND REPORTING CENTER (CRC).....	9,875	9,875
202 AIRBORNE WARNING AND CONTROL SYSTEM (AWACS).....	171,014	167,014
203 TACTICAL AIRBORNE CONTROL SYSTEMS AFSPECWAR - TACP.....	4,598	4,598
205 COMBAT AIR INTELLIGENCE SYSTEM ACTIVITIES.....	21,863	17,863
206 THEATER BATTLE MANAGEMENT (TBM) C41.....	7,905	7,905
207 ELECTRONIC WARFARE INTEGRATED REPROGRAMMING (EWIR).....	15,000	15,000
208 TACTICAL AIR CONTROL PARTY--MOD.....	13,081	13,081

123E

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
209 DCAPES	4,305	4,305
210 AIR FORCE CALIBRATION PROGRAMS	1,984	1,984
211 AIRBASE AIR DEFENSE SYSTEMS (ABADS)	7,392	7,392
212 NATIONAL TECHNICAL NUCLEAR FORENSICS	1,971	1,971
213 SEEK EAGLE	30,539	30,539
214 USAF MODELING AND SIMULATION	17,110	17,110
215 WARGAMING AND SIMULATION CENTERS	7,535	7,535
216 BATTLEFIELD ABN COMM NODE (BACN)	32,008	32,008
217 DISTRIBUTED TRAINING AND EXERCISES	4,007	4,007
218 MISSION PLANNING SYSTEMS	92,557	96,057
219 TACTICAL DECEPTION	489	14,338
220 OPERATIONAL HG - CYBER	2,115	2,115
221 DISTRIBUTED CYBER WARFARE OPERATIONS	72,487	72,487
222 AF DEFENSIVE CYBERSPACE OPERATIONS	18,449	18,449
223 JOINT CYBER COMMAND AND CONTROL (JCC2)	79,079	79,079
224 UNIFIED PLATFORM (UP)	101,893	91,893
228 INTEL DATA APPLICATIONS	493	493
229 GEOBASE	2,782	2,782
230 NUCLEAR PLANNING AND EXECUTION SYSTEM (NPES)	---	44,684
231 CYBER SECURITY INTELLIGENCE SUPPORT	5,224	5,224
AIR FORCE SPACE AND CYBER NON-TRADITIONAL ISR FOR 238 BATTLESPACE AWARENESS	2,463	2,463
239 E-4B NATIONAL AIRBORNE OPERATIONS CENTER (NAOC)	26,331	26,331
240 MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK	20,700	58,165
242 INFORMATION SYSTEMS SECURITY PROGRAM	8,032	8,032
243 GLOBAL FORCE MANAGEMENT - DATA INITIATIVE	452	452
244 ALL DOMAIN COMMON PLATFORM	64,000	64,000
246 AIRBORNE SIGINT ENTERPRISE	97,546	93,546
247 COMMERCIAL ECONOMIC ANALYSIS	3,770	3,770
251 CCMD INTELLIGENCE INFORMATION TECHNOLOGY	1,663	1,663
252 ISR MODERNIZATION & AUTOMATION DVMT (IMAD)	18,888	15,888
253 GLOBAL AIR TRAFFIC MANAGEMENT (GATM)	4,672	4,672
254 CYBER SECURITY INITIATIVE	290	290
255 WEATHER SERVICE	26,228	39,228
256 AIR TRAFFIC CONTROL, APPROACH, & LANDING SYSTEM (ATC)	8,749	15,749

123F)



(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
257 AERIAL TARGETS.....	1,528	1,528
258 SECURITY AND INVESTIGATIVE ACTIVITIES.....	223	223
260 DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES.....	8,733	8,733
264 INTEGRATED BROADCAST SERVICE.....	21,335	21,335
265 DRAGON U-2.....	17,146	35,846
267 AIRBORNE RECONNAISSANCE SYSTEMS.....	71,791	108,291
268 MANNED RECONNAISSANCE SYSTEMS.....	14,799	14,799
269 DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS.....	24,568	24,568
270 RQ-4 UAV.....	83,124	83,124
271 NETWORK-CENTRIC COLLABORATIVE TARGET (TIARA).....	17,224	17,224
272 NATO AGS.....	19,473	19,473
273 SUPPORT TO DCGS ENTERPRISE.....	40,421	40,421
INTERNATIONAL INTELLIGENCE TECHNOLOGY AND 274 ARCHITECTURES.....	14,473	14,473
275 RAPID CYBER ACQUISITION.....	4,326	4,326
276 PERSONNEL RECOVERY COMMAND & CTRL (PRC2).....	2,567	2,567
277 INTELLIGENCE MISSION DATA (IMD).....	6,169	6,169
278 C-130 AIRLIFT SQUADRON.....	9,752	12,552
279 C-5 AIRLIFT SQUADRONS.....	17,507	17,507
280 C-17 AIRCRAFT.....	16,360	16,360
281 C-130J PROGRAM.....	14,112	24,112
282 LARGE AIRCRAFT IR COUNTERMEASURES (LAIRCM).....	5,540	5,540
283 KC-135S.....	3,564	3,564
285 CV-22.....	17,189	17,189
286 SPECIAL TACTICS / COMBAT CONTROL.....	6,640	6,640
288 MAINTENANCE, REPAIR & OVERHAUL SYSTEM.....	26,921	26,921
289 LOGISTICS INFORMATION TECHNOLOGY (LOGIT).....	7,071	11,071
291 OTHER FLIGHT TRAINING.....	1,999	5,999
292 OTHER PERSONNEL ACTIVITIES.....	---	5,000
293 JOINT PERSONNEL RECOVERY AGENCY.....	1,841	1,841
294 CIVILIAN COMPENSATION PROGRAM.....	3,560	3,560
295 PERSONNEL ADMINISTRATION.....	3,368	3,368
296 AIR FORCE STUDIES AND ANALYSIS AGENCY.....	1,248	1,248
297 FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT..	4,852	4,852
298 DEFENSE ENTERPRISE ACNTNG AND MGT SYS (DEAMS).....	---	54,400

123G

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
301 SERVICE SUPPORT TO SPACECOM ACTIVITIES.....	6,737	6,737
TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT.....	5,836,568	6,229,256
9999 CLASSIFIED PROGRAMS.....	15,868,973	17,011,053
STRATEGIC MISSION PLANNING AND EXECUTION SYSTEM - SOFTWARE PILOT PROGRAM.....	96,100	---
AIR & SPACE OPERATIONS CENTER (AOC) - SOFTWARE PILOT PROGRAM.....	186,915	---
DEFENSE ENTERPRISE ACCOUNTING AND MANAGEMENT SYSTEM (DEAMS) - SOFTWARE PILOT PRO.....	135,263	---
	=====	=====
TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, AIR FORCE.....	39,184,328	41,592,913
	=====	=====

123 H

**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
**[In thousands of dollars]**

<b>R-1</b>	<b>Budget Request</b>	<b>Final Bill</b>
<b>1 DEFENSE RESEARCH SCIENCES</b>	<b>328,303</b>	<b>353,303</b>
Program increase - basic research		25,000
<b>2 UNIVERSITY RESEARCH INITIATIVES</b>	<b>162,403</b>	<b>187,403</b>
Program increase - Defense university research instrumentation program		25,000
<b>5 MATERIALS</b>	<b>113,460</b>	<b>220,960</b>
Program increase - born qualified additive manufacturing		20,000
Program increase - deployable passive cooling		5,000
Program increase - digital maintenance advisor demonstration for F-16		5,000
Program increase - failure prediction in material models		5,000
Program increase - nano-bio technologies for aeromedical and en route care		10,000
Program increase - high and ultra-high temperature ceramic-matrix composites for hypersonics		10,000
Program increase - additive manufacturing of alloys		10,000
Program increase - high energy synchrotron x-ray research		8,500
Program increase - photonic radio frequency CM		10,000
Program increase - stealth aircraft coatings research		4,000
Program increase - thermal protection for hypersonic vehicles		10,000
Program increase - coating technologies to reduce lifecycle costs		5,000
Program increase - maturation of carbon-carbon thermal protection systems		5,000
<b>6 AEROSPACE VEHICLE TECHNOLOGIES</b>	<b>163,032</b>	<b>183,032</b>
Program increase - educational partnership agreement for secure UAV technologies		10,000
Program increase - collaborative hypersonic demonstration		10,000
<b>7 HUMAN EFFECTIVENESS APPLIED RESEARCH</b>	<b>136,273</b>	<b>156,863</b>
Program increase - F-35 helmet mounted display system tech refresh and weight reduction		9,590
Program increase - pilot hypoxia detection and notification		7,000
Program increase - special tactics support assessment		4,000
<b>8 AEROSPACE PROPULSION</b>	<b>174,683</b>	<b>190,683</b>
Program increase - modular open system architecture for turbine engine technology		6,000
Program increase - small business research for rocket technology		5,000
Program increase - emergency power and cooling thermal management growth		5,000

123I

R-1	Budget Request	Final Bill
<b>9 AEROSPACE SENSORS</b>	<b>193,514</b>	<b>255,918</b>
Program increase - exploitation detection for flexible combat avionics		5,000
Program increase - low cost sensors for UAVs		5,000
Program increase - zero-trust environment for semi-conductor technology		10,000
Program increase - extreme wideband RF sensor		19,000
Program increase - reliability of combat cloud communications systems		7,000
Air Force requested transfer from RDTE,SF line 1 for civilian pay		5,404
Program increase - hardware-based oversight system for microelectronic endpoints		6,000
Program increase - enhanced security sensors to detect threats in near and far field emissions		5,000
<b>13 DIRECTED ENERGY TECHNOLOGY</b>	<b>121,869</b>	<b>116,456</b>
Air Force requested transfer to RDTE,SF line 1 for civilian pay		-5,413
<b>14 DOMINANT INFORMATION SCIENCES AND METHODS</b>	<b>169,110</b>	<b>221,110</b>
Program increase - quantum network testbed		10,000
Program increase - photonic quantum computing		25,000
Program increase - quantum internet battlefield		7,000
Program increase - ion trap quantum computing		10,000
<b>17 FUTURE AIR FORCE INTEGRATED TECHNOLOGY DEMOS</b>	<b>131,643</b>	<b>112,643</b>
Program growth - Rocket Cargo		-19,000
<b>18 ADVANCED MATERIALS FOR WEAPON SYSTEMS</b>	<b>31,905</b>	<b>63,378</b>
Transformational technology development lack of justification		-327
Program increase - metals affordability research		10,000
Program increase - polymer printing technology for additive manufacturing		5,000
Program increase - certification for advanced materials		15,000
Program increase - laser protective eyewear		1,800
<b>19 SUSTAINMENT S&amp;T</b>	<b>21,057</b>	<b>19,112</b>
Transformational technology development lack of justification		-1,945
<b>20 ADVANCED AEROSPACE SENSORS</b>	<b>44,730</b>	<b>53,750</b>
Transformational technology development lack of justification		-1,014
Air Force requested transfer from RDTE,SF line 2		734
Program increase - software verification and validation for autonomous sensors		9,300
<b>21 AEROSPACE TECHNOLOGY DEV/DEMO</b>	<b>70,486</b>	<b>105,486</b>
Program increase - heavy fuel engine hybrid electric ducted fan advanced propulsion		15,000
Program increase - small unit autonomous UAS resupply		20,000

123J

R-1	Budget Request	Final Bill
<b>22 AEROSPACE PROPULSION &amp; POWER TECHNOLOGY</b>	<b>75,273</b>	<b>110,273</b>
Program increase - domestic manufacturing of solid state power controllers		10,000
Program increase - silicon carbide research		10,000
Program increase - hypersonic liquid rocket propulsion		10,000
Program increase - altitude chamber infrastructure upgrades		5,000
<b>23 ELECTRONIC COMBAT TECHNOLOGY</b>	<b>46,591</b>	<b>44,938</b>
Transformational technology development - EW quick reaction capabilities lack of justification		-1,517
Transformational technology development - RF warning and countermeasures technology lack of justification		-136
<b>26 HUMAN EFFECTIVENESS ADVANCED TECHNOLOGY</b>	<b>24,589</b>	<b>23,459</b>
Transformational technology development - directed energy bioeffects parameters lack of justification		-240
Transformational technology development - human dynamics and terrain demonstration lack of justification		-308
Transformational technology development - mission effective performance lack of justification		-411
Transformational technology development - warfighter interfaces lack of justification		-171
<b>27 CONVENTIONAL WEAPONS TECHNOLOGY</b>	<b>157,423</b>	<b>155,306</b>
Transformational component lack of justification		-2,117
<b>28 ADVANCED WEAPONS TECHNOLOGY</b>	<b>28,258</b>	<b>31,855</b>
Transformational technology development - high power solid state laser technology lack of justification		-188
Transformational technology development - high power microwave development and integration lack of justification		-1,215
Program increase - LIDAR CUAS automated target recognition		5,000

123K

R-1

Budget Request

Final Bill

	Budget Request	Final Bill
<b>29 MANUFACTURING TECHNOLOGY PROGRAM</b>	<b>45,259</b>	<b>176,200</b>
Manufacturing for transformational technologies lack of justification		-1,810
Program increase - academic-industry partnerships for advanced materials and manufacturing processes		6,000
Program increase - adaptive modeling for low-cost titanium		5,000
Program increase - beryllium additive manufacturing		3,000
Program increase - component 3D online demonstration		10,000
Program increase - flexible thermal protection systems for hypersonics		10,000
Program increase - hybrid manufacturing for rapid tooling and repair		10,000
Program increase - massive area additive manufacturing		10,000
Program increase - MRO advanced process technology development		10,000
Program increase - sustainment and modernization research and development		10,000
Program increase - technologies to repair fastener holes		5,000
Program increase - thermoplastic material systems		4,751
Program increase - virtual augmented mixed reality readiness		8,000
Program increase - affordable manufacture of resistive films		10,000
Program increase - automated fiber placement for composite structures		5,000
Program increase - rapid large format metal additive manufacturing to optimize scramjet production		5,000
Program increase - universal robotic controller		6,000
Program increase - manufacturing technology for reverse engineering		5,000
Program increase - hypersonics supply chain research		10,000
<b>30 BATTLESPACE KNOWLEDGE DEV/DEMO</b>	<b>56,772</b>	<b>72,138</b>
Transformational technology development - battlespace development and demonstration lack of justification		-2,011
Transformational technology development - cyber battlespace development and demonstration lack of justification		-813
Program increase - assured communication and networks		10,000
Project increase - development of cybersecurity methodologies		2,990
Project increase - Skydome trusted Smart-X experimentation environment		200
Program increase - command and control capability development and deployment		5,000
<b>34 ICBM DEM/VAL</b>	<b>49,621</b>	<b>76,621</b>
Program increase - ICBM mission enhancements		27,000
<b>37 AIR FORCE WEATHER SERVICES RESEARCH</b>	<b>986</b>	<b>3,855</b>
Program increase - drought warning system		2,869
<b>38 ADVANCED BATTLE MANAGEMENT SYSTEM</b>	<b>203,849</b>	<b>268,849</b>
Program increase		15,000
Program increase - digital infrastructure		50,000
<b>39 ADVANCED ENGINE DEVELOPMENT</b>	<b>123,712</b>	<b>583,712</b>
Program increase - AETP		460,000

123L

R-1	Budget Request	Final Bill
<b>40 ARCHITECTURE INITIATIVES</b>	<b>82,438</b>	<b>25,138</b>
Architecture design and integration excess to need		-4,000
Architecture demonstration and evaluation excess to need		-53,300
<b>42 DIRECTED ENERGY PROTOTYPING</b>	<b>10,820</b>	<b>15,820</b>
Program increase - HEL prototype with advanced thermal and power technology		5,000
<b>43 HYPERSONICS PROTOTYPING</b>	<b>438,378</b>	<b>0</b>
Transfer ARRW funding to new line 43A		-238,262
Transfer HACM funding to new line 43B		-200,116
<b>HYPERSONICS PROTOTYPING - AIR LAUNCHED RAPID</b>		
<b>43A RESPONSE WEAPON (ARRW)</b>	<b>0</b>	<b>318,687</b>
Transfer from line 43 for greater transparency and budget discipline		238,262
Transfer from MP,AF line 4 for testing shortfall		80,425
<b>HYPERSONICS PROTOTYPING - HYPERSONIC ATTACK CRUISE</b>		
<b>43B MISSILE (HACM)</b>	<b>0</b>	<b>190,116</b>
Transfer from line 43 for greater transparency and budget discipline		200,116
HACM ahead of need		-10,000
<b>46 SURVIVABLE AIRBORNE OPERATIONS CENTER</b>	<b>133,253</b>	<b>95,788</b>
Air Force requested transfer to line 240 for common VLF/LF receiver incr 2		-37,465
<b>47 TECHNOLOGY TRANSFER</b>	<b>15,768</b>	<b>56,768</b>
Program increase - technology transfer		7,000
Program increase - academic partnership intermediary agreements		10,000
Program increase - partnership intermediary agreements		4,000
Program increase - digital part transformation to support operational readiness		20,000
<b>HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM</b>		
<b>48 (HDBTDS) PROGRAM</b>	<b>15,886</b>	<b>12,886</b>
Unexecuted prior year balances		-3,000
<b>51 TECH TRANSITION PROGRAM</b>	<b>343,545</b>	<b>369,045</b>
Program increase - additive metals manufacturing		10,000
Transfer to line 51A operational energy efforts		-34,000
Prototyping program growth		-11,500
MC-130 amphibious capability experimentation		-11,000
Program increase - Agility Prime		54,000
Program increase - logistics enhancements		4,000
Program increase - autonomous air combat operations		10,000
Program increase - alternative PNT phase III demonstration		4,000
<b>51A OPERATIONAL ENERGY AND INSTALLATION RESILIENCE</b>	<b>0</b>	<b>104,000</b>
Program increase - energy and climate resilience		70,000
Transfer from line 51 for operational energy efforts		34,000

123M

R-1		Budget Request	Final Bill
65	<b>RAPID SUSTAINMENT MODERNIZATION (RSM)</b>	0	55,000
	Program increase - additive manufacturing with integrated digital engineering		5,000
	Program increase - additive manufacturing		16,000
	Program increase - research for rapid repair and sustainability		6,000
	Program increase - laser metal deposition powder for turbine engine component restoration		13,000
	Program increase - air frame additive manufacturing		15,000
78	<b>FUTURE ADVANCED WEAPON ANALYSIS &amp; PROGRAMS</b>	23,499	18,499
	Underexecution		-5,000
79	<b>PNT RESILIENCY, MODS, AND IMPROVEMENTS</b>	167,520	163,520
	Reduce program growth		-4,000
81	<b>ELECTRONIC WARFARE DEVELOPMENT</b>	2,110	7,110
	Program increase - next generation ultra wideband receiver for radar jammer		5,000
82	<b>TACTICAL DATA NETWORKS ENTERPRISE</b>	169,836	159,836
	Underexecution		-10,000
87	<b>AGILE COMBAT SUPPORT</b>	16,603	27,938
	Contract award delays		-1,665
	Program increase - airfield sustainment and damage recovery technologies		5,000
	Program increase - carbon materials		3,000
	Program increase - modern timber products for expeditionary construction		5,000
92	<b>LONG RANGE STANDOFF WEAPON</b>	609,042	599,042
	Rephase funds for EMD contract award		-10,000
96	<b>KC-46</b>	1	0
	Programming error		-1
98	<b>HH-60W (CRH)</b>	66,355	62,255
	Contract award delays		-4,100
103	<b>FULL COMBAT MISSION TRAINING</b>	7,064	12,064
	Program increase - airborne augmented reality for pilot training		5,000
105	<b>KC-46A TANKER SQUADRONS</b>	73,458	66,758
	Underexecution		-6,700
107	<b>VC-25B</b>	680,665	655,665
	Program delays		-25,000
109	<b>TRAINING DEVELOPMENTS</b>	4,482	2,482
	Underexecution		-2,000

123N



R-1	Budget Request	Final Bill
<b>124 THREAT SIMULATOR DEVELOPMENT</b>	<b>41,909</b>	<b>46,909</b>
Program increase - commercial physics-based modeling and simulation technology		5,000
<b>ACQUISITION WORKFORCE - GLOBAL VIGILANCE AND COMBAT</b>		
<b>131 SYSTEMS</b>	<b>243,796</b>	<b>267,919</b>
Air Force requested realignment		24,123
<b>132 ACQUISITION WORKFORCE - GLOBAL REACH</b>	<b>435,930</b>	<b>429,659</b>
Air Force requested realignment		-6,271
<b>ACQUISITION WORKFORCE - CYBER, NETWORK, AND</b>		
<b>133 BUSINESS SYSTEMS</b>	<b>435,274</b>	<b>439,571</b>
Air Force requested realignment		297
Program increase - business enterprise systems product innovation		4,000
<b>135 ACQUISITION WORKFORCE - CAPABILITY INTEGRATION</b>	<b>243,806</b>	<b>263,014</b>
Air Force requested realignment		19,208
<b>ACQUISITION WORKFORCE - ADVANCED PROGRAM</b>		
<b>136 TECHNOLOGY</b>	<b>103,041</b>	<b>62,755</b>
Air Force requested realignment		-40,286
<b>137 ACQUISITION WORKFORCE- NUCLEAR SYSTEMS</b>	<b>226,055</b>	<b>227,425</b>
Air Force requested realignment		1,370
<b>138 MANAGEMENT HQ - R&amp;D</b>	<b>4,079</b>	<b>5,537</b>
Air Force requested realignment		1,458
<b>141 REQUIREMENTS ANALYSIS AND MATURATION</b>	<b>85,799</b>	<b>90,799</b>
Prior year carryover		-5,000
Program increase - nuclear modernization analytics		10,000
<b>144 C4 - STRATCOM</b>	<b>25,340</b>	<b>35,340</b>
Program increase - NC3 rapid engineering architecture collaboration hub		10,000
<b>145 ENTERPRISE INFORMATION SERVICES</b>	<b>28,720</b>	<b>26,720</b>
Reduce program growth		-2,000
<b>157 SUFT</b>	<b>5,509</b>	<b>8,589</b>
Program increase - PRIME desktop trainer		3,080
<b>160 F-35 C2D2</b>	<b>985,404</b>	<b>1,105,404</b>
Program increase - F135 engine enhancement		120,000
<b>167 B-52 SQUADRONS</b>	<b>715,811</b>	<b>646,811</b>
CERP rapid prototyping materiel contract delay		-55,000
Radar modernization contract delay		-26,000
Program increase - global strike innovation hub		10,000
Program increase - B-52 training automation		2,000
<b>169 B-1B SQUADRONS</b>	<b>29,127</b>	<b>39,127</b>
Hypersonic integration		10,000

1230

R-1	Budget Request	Final Bill
170 B-2 SQUADRONS B-2 display modernization carryover	144,047	131,647 -12,400
179 OVER-THE-HORIZON BACKSCATTER RADAR Program increase - North Warning System (NWS) OTH radar	42,300	67,400 25,100
181 MQ-9 Program protection technology insertion ahead of need Government cost growth	85,135	79,121 -1,014 -5,000
184 A-10 SQUADRONS OFP delays	39,224	34,224 -5,000
185 F-16 SQUADRONS Program increase - lithium battery replacement for F-16 hydrazine emergency power units Digital warning radar schedule slip	224,573	225,573 5,000 -4,000
190 F-15EX Prior year carryover	118,126	107,126 -11,000
197 ENGINE CIP Program increase - F135	103,715	115,715 12,000
199 SMALL DIAMETER BOMB Program increase - precise navigation	27,109	32,109 5,000
200 AIR AND SPACE OPERATIONS CENTER Programming error Transfer from line 318	3	90,027 -3 90,027
202 AWACS Reduce program growth	171,014	167,014 -4,000
205 COMBAT AIR INTELLIGENCE SYSTEM Underexecution	21,863	17,863 -4,000
218 MISSION PLANNING SYSTEMS Program increase - digital flight scheduling	92,557	96,057 3,500
219 TACTICAL DECEPTION Program increase - radar modeling Program increase - asset signature modification	489	14,338 6,849 7,000
224 UNIFIED PLATFORM Unjustified growth	101,893	91,893 -10,000
230 NUCLEAR PLANNING AND EXECUTION SYSTEM Transfer from line 317	0	44,684 44,684
240 MEECN Air Force requested transfer from line 46 for common VLF/LF receiver incr 2	20,700	58,165 37,465

123P

R-1	Budget Request	Final Bill
<b>246 AIRBORNE SIGINT ENTERPRISE</b>	<b>97,546</b>	<b>93,546</b>
Program element carryover		-4,000
<b>252 ISR MODERNIZATION &amp; AUTOMATION DEVELOPMENT</b>	<b>18,888</b>	<b>15,888</b>
Underexecution		-3,000
<b>255 WEATHER SERVICE</b>	<b>26,228</b>	<b>39,228</b>
Program increase - commercial weather data pilot		10,000
Program increase - atmospheric rivers research		3,000
<b>256 ATCALs</b>	<b>8,749</b>	<b>15,749</b>
Program increase - wind turbine impact mitigation radar certification		2,000
Program increase - mobile air traffic system with UAS negation		5,000
<b>265 U-2</b>	<b>17,146</b>	<b>35,846</b>
Program increase - unfunded priority for avionics tech refresh and sensor on-board processor		18,700
<b>267 AIRBORNE RECONNAISSANCE SYSTEMS</b>	<b>71,791</b>	<b>108,291</b>
Program increase - wide area motion imagery		12,500
Program increase - Air Force unfunded priority for ASARS upgrades		24,000
<b>278 C-130 SQUADRONS</b>	<b>9,752</b>	<b>12,552</b>
Program increase - C-130H infrared suppression		2,800
<b>281 C-130J</b>	<b>14,112</b>	<b>24,112</b>
HUD with enhanced vision system for firefighting		10,000
<b>289 LOGISTICS INFORMATION TECHNOLOGY (LOGIT)</b>	<b>7,071</b>	<b>11,071</b>
Program increase - automated inventory management demonstration		4,000
<b>291 OTHER FLIGHT TRAINING</b>	<b>1,999</b>	<b>5,999</b>
Program increase - aircraft transition optimization support		4,000
<b>292 OTHER PERSONNEL ACTIVITIES</b>	<b>0</b>	<b>5,000</b>
Program increase - implementation of Independent Review Commission on Sexual Assault in the Military		5,000
<b>298 DEFENSE ENTERPRISE ACNTNG AND MGT SYS (DEAMS)</b>	<b>0</b>	<b>54,400</b>
Transfer from line 319		54,400
<b>999 CLASSIFIED PROGRAMS</b>	<b>15,868,973</b>	<b>17,011,053</b>
Classified adjustment		1,142,080
<b>STRATEGIC MISSION PLANNING AND EXECUTION SYSTEM -</b>		
<b>317 SOFTWARE PILOT PROGRAM</b>	<b>96,100</b>	<b>0</b>
Transfer to OMAF lines 11C, 15D and 42A		-46,374
Transfer to OPAF line 23		-212
Transfer to OPAF line 26		-4,845
Transfer to line 230		-44,669

123 Q

R-1

Budget Request

Final Bill

**AIR & SPACE OPERATIONS CENTER (AOC) - SOFTWARE PILOT**

<b>318 PROGRAM</b>	<b>186,915</b>	<b>0</b>
Transfer to OMAF lines 11C, 15D and 42A		-74,849
Transfer to OPAF line 42		-20,795
Transfer to line 200		-90,027
Excess to need		-1,244
<b>319 DEAMS - SOFTWARE PILOT PROGRAM</b>	<b>135,263</b>	<b>0</b>
Transfer to OMAF lines 11C, 15D and 42A		-77,760
Transfer to OPAF line 39		-3,103
Transfer to line 298		-54,400

123R

#### TECHNOLOGY TRANSFER

The agreement directs the Secretary of the Air Force to submit to the congressional defense committees, not later than 90 days after the enactment of this Act, a report on the funding required and budgeted across the future years defense program for Air Force technology transfer along with an analysis of the current use of partnership intermediary agreements within the Department of Defense laboratory system for technology transfer with the Air Force.

#### HYPERSONICS PROTOTYPING

The agreement provides \$318,687,000 for the Air-Launched Rapid Response Weapon (ARRW) and \$190,116,000 for the Hypersonic Attack Cruise Missile. The budget request combined funding for these prototyping efforts into a single line. The agreement provides funds for each effort in a separate line to increase transparency and oversight. Due to recent failures and delays in testing that have extended the ARRW program schedule and put a first production lot contract at risk for award in fiscal year 2022, no procurement funds are provided in this Act for ARRW. In consultation with the Air Force, the agreement transfers \$80,425,000 requested in Missile Procurement, Air Force to this account to support an extension of the testing program and mitigate a projected funding shortfall for the ARRW prototyping effort within this account. This language replaces the language under this heading in House Report 117-88.

RESEARCH, DEVELOPMENT, TEST AND EVALUATION, SPACE FORCE

The agreement provides \$11,597,405,000 for Research, Development, Test and Evaluation, Space Force, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT (125 A-F)

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
RESEARCH, DEVELOPMENT, TEST & EVALUATION, SPACE FORCE		
1	APPLIED RESEARCH SPACE TECHNOLOGY.....	175,796 286,505
	TOTAL, APPLIED RESEARCH.....	175,796 286,505
2	ADVANCED TECHNOLOGY DEVELOPMENT SPACE ADVANCED TECHNOLOGY DEVELOPMENT/DEMO.....	76,653 238,584
2A	TECH TRANSITION PROGRAM (SPACE).....	--- 50,000
	TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT.....	76,653 288,584
COMPONENT DEVELOPMENT & PROTOTYPES		
3	NAVSTAR GLOBAL POSITIONING SYSTEM (USER EQUIPMENT) (SPACE).....	434,194 434,194
4	EO/IR WEATHER SYSTEMS.....	162,274 162,274
5	SPACE SYSTEM SUPPORT.....	37,000 37,000
6	WEATHER SYSTEM FOLLOW-ON.....	61,521 53,421
7	SPACE SITUATION AWARENESS SYSTEM.....	123,262 105,062
8	SPACE SYSTEMS PROTOTYPE TRANSITIONS (SSPT).....	101,851 91,851
9	SPACE CONTROL TECHNOLOGY.....	32,931 35,931
10	SPACE SECURITY AND DEFENSE PROGRAMS (SSDP).....	56,546 53,896
11	PROTECTED TACTICAL ENTERPRISE SERVICE (PTES).....	100,320 100,320
12	PROTECTED TACTICAL SERVICE (PTS).....	243,285 229,329
13	EVOLVED STRATEGIC SATCOM (ESS).....	160,056 172,089
14	SPACE RAPID CAPABILITIES OFFICE.....	66,193 73,193
	TOTAL, COMPONENT DEVELOPMENT & PROTOTYPES.....	1,579,433 1,548,560
SYSTEM DEVELOPMENT & DEMONSTRATION		
15	GPS III FOLLOW-ON (GPS IIIF).....	264,265 246,332
16	SPACE SITUATION AWARENESS OPERATIONS.....	56,279 42,008
17	COUNTERSPACE SYSTEMS.....	38,063 48,063
18	WEATHER SYSTEM FOLLOW-ON.....	1,438 1,438
19	SPACE SITUATION AWARENESS SYSTEMS.....	127,026 127,026
20	ADVANCED EHF MILSATCOM (SPACE).....	28,218 26,942
21	POLAR MILSATCOM (SPACE).....	127,870 112,170
22	NEXT GENERATION OPIR.....	2,451,256 125,853
22A	NEXT GENERATION OPIR - GEO.....	--- 1,199,193
22B	NEXT GENERATION OPIR - POLAR.....	--- 471,398
22C	NEXT GENERATION OPIR - GROUND.....	--- 542,477

(125A)

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
23	COMMERCIAL SATCOM (COMSATCOM) INTEGRATION.....	23,400 23,400
24	NATIONAL SECURITY SPACE LAUNCH PROGRAM (SPACE) - EMD..	221,510 201,510
	TOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION.....	3,339,325 3,167,810
	MANAGEMENT SUPPORT	
25	SPACE TEST AND TRAINING RANGE DEVELOPMENT.....	19,319 69,819
26	ACQ WORKFORCE - SPACE & MISSILE SYSTEMS.....	214,051 214,051
27	SPACE & MISSILE SYSTEMS CENTER - MHA.....	12,119 12,119
28	MAJOR T&E INVESTMENT - SPACE.....	71,503 86,503
29	ROCKET SYSTEMS LAUNCH PROGRAM (SPACE).....	17,769 17,769
30	TACTICALLY RESPONSIVE LAUNCH.....	--- 50,000
31	SPACE TEST PROGRAM (STP).....	20,881 20,881
	TOTAL, RDT&E MANAGEMENT SUPPORT.....	355,642 471,142
	OPERATIONAL SYSTEMS DEVELOPMENT	
33	GLOBAL SENSOR INTEGRATED ON NETWORK (GSIN).....	4,731 4,731
34	FAMILY OF ADVANCED BLOS TERMINALS (FAB-T).....	156,788 156,788
35	DCO-SPACE.....	2,150 2,150
36	NARROWBAND SATELLITE COMMUNICATIONS.....	112,012 110,012
37	SATELLITE CONTROL NETWORK (SPACE).....	36,810 36,810
38	NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE AND CONTROL SEGMENTS).....	1,966 1,966
39	SPACE AND MISSILE TEST EVALUATION CENTER.....	1,699 1,699
40	SPACE INNOVATION, INTEGRATION AND RAPID TECHNOLOGY DEVELOPMENT.....	18,054 18,054
41	SPACELIFT RANGE SYSTEM (SPACE).....	11,115 31,115
42	GPS III SPACE SEGMENT.....	7,207 7,207
43	SPACE SUPERIORITY ISR.....	18,109 18,109
44	NATIONAL SPACE DEFENSE CENTER (NSDC).....	1,280 1,280
45	BALLISTIC MISSILE DEFENSE RADARS.....	12,292 12,292
46	NCMC - TW/AA SYSTEM.....	9,858 9,858
47	NUDET DETECTION SYSTEM (SPACE).....	45,887 45,887
48	SPACE SITUATION AWARENESS OPERATIONS.....	64,763 64,763

125B



(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
49 GLOBAL POSITIONING SYSTEM III - OPERATIONAL CONTROL SEGMENT.....	413,766	402,532
53 ENTERPRISE GROUND SERVICES.....	191,713	191,713
TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT.....	1,110,200	1,116,966
999 CLASSIFIED PROGRAMS.....	4,474,809	4,563,309
54 JSPOC MISSION SYSTEM.....	154,529	154,529
TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, SPACE FORCE.....	11,266,387	11,597,405

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**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
**[In thousands of dollars]**

R-1	Budget Request	Final Bill
<b>1 SPACE TECHNOLOGY</b>	<b>175,796</b>	<b>286,505</b>
Inadequate justification		-7,500
Air Force requested transfer to RDTE,AF line 9 for civilian pay		-5,404
Air Force requested transfer from RDTE,AF line 13 for civilian pay		5,413
Program increase - radiation hardened microprocessor		8,900
Program increase - lithium sulfur battery development		4,000
Program increase - thin-film photovoltaic energy		3,000
Program increase - multi-mission distributed antenna technology		10,000
Program increase - hybrid space architecture		5,000
Program increase - autonomy in space		10,000
Program increase - ground-based interferometry		6,000
Program increase - non-toxic fuels		3,000
Program increase - open architecture payloads		10,000
Program increase - ultra-lightweight space solar arrays		5,000
Program increase - university consortia for space technology		10,000
Program increase - advanced multi-physics thermal management		5,000
Program increase - fundamental research		15,000
Program increase - adaptive medium-lift engine architecture		5,000
Program increase - architecture for space domain awareness beyond GEO		15,400
Program increase - space solar power inc demonstration		2,900
<b>2 SPACE ADVANCED TECHNOLOGY DEVELOPMENT/DEMO</b>	<b>76,653</b>	<b>238,584</b>
Program increase - tridyne multi-mode propulsion		7,000
Project increase - core manipulator joint		1,665
Air Force requested transfer to RDTE,AF line 20		-734
Program increase - accelerate cislunar flight experiment		61,000
Program increase - nuclear propulsion technologies for cislunar flight		70,000
Program increase - upper stage engine technology		23,000
<b>2A TECH TRANSITION PROGRAM (SPACE)</b>	<b>0</b>	<b>50,000</b>
Program increase - arctic communications		50,000
<b>6 WEATHER SYSTEM FOLLOW-ON</b>	<b>61,521</b>	<b>53,421</b>
WSF-M product development excess to need		-8,100
<b>7 SPACE SITUATION AWARENESS SYSTEMS</b>	<b>123,262</b>	<b>105,062</b>
DARC site 1 contract delays		-18,200
<b>8 SPACE SYSTEMS PROTOTYPE TRANSITIONS (SSPT)</b>	<b>101,851</b>	<b>91,851</b>
Program increase - space combat cloud		5,000
ROOSTER development delay		-15,000
<b>9 SPACE CONTROL TECHNOLOGY</b>	<b>32,931</b>	<b>35,931</b>
Program increase - high-thrust gridded ion engine		3,000
<b>10 SPACE SECURITY AND DEFENSE PROGRAM</b>	<b>56,546</b>	<b>53,896</b>
Forward financing		-2,650
<b>12 PROTECTED TACTICAL SERVICE (PTS)</b>	<b>243,285</b>	<b>229,329</b>
Rapid prototyping excess to need		-13,956

125D

R-1	Budget Request	Final Bill
<b>13 EVOLVED STRATEGIC SATCOM (ESS)</b>	<b>160,056</b>	<b>172,089</b>
Prototyping excess to need		-7,967
Program increase - IT upgrades for NC3 cybersecurity		20,000
<b>14 SPACE RAPID CAPABILITIES OFFICE</b>	<b>66,193</b>	<b>73,193</b>
Program increase - Digital beamformed ground-based SATCOM		7,000
<b>15 GPS III FOLLOW-ON (GPS IIIF)</b>	<b>264,265</b>	<b>246,332</b>
Historical carryover		-17,933
<b>16 SPACE SITUATION AWARENESS OPERATIONS</b>	<b>56,279</b>	<b>42,008</b>
Management services unjustified increase		-4,000
GBOSS EMD contract excess to need		-10,271
<b>17 COUNTERSPACE SYSTEMS</b>	<b>38,063</b>	<b>48,063</b>
Program increase - Bounty Hunter		10,000
<b>20 ADVANCED EHF MILSATCOM (SPACE)</b>	<b>28,218</b>	<b>26,942</b>
Capabilities insertion program excess to need		-1,276
<b>21 POLAR MILSATCOM (SPACE)</b>	<b>127,870</b>	<b>112,170</b>
EPS-R product development excess to need		-8,000
EPS-R product development forward financing		-7,700
<b>22 NEXT GENERATION OPIR</b>	<b>2,451,256</b>	<b>125,853</b>
SMI technology maturation overestimation		-12,335
Overestimation of FORGE command and control		-10,000
Excess to need		-90,000
Transfer to line 22A for project 657120 Next-Gen OPIR Space, Block 0 GEO		-1,137,393
Transfer to line 22B for project 657121 Next-Gen OPIR Space, Block 0 Polar		-471,398
Transfer to line 22C for project 657106 Next-Gen OPIR Ground		-504,577
Space Force requested realignment		-99,700
<b>22A NEXT GENERATION OPIR - GEO</b>	<b>0</b>	<b>1,199,193</b>
Transfer from line 22 for project 657120 Next-Gen OPIR Space, Block 0 GEO		1,137,393
Space Force requested realignment		61,800
<b>22B NEXT GENERATION OPIR - Polar</b>	<b>0</b>	<b>471,398</b>
Transfer from line 22 for project 657121 Next-Gen OPIR Space, Block 0 Polar		471,398
<b>22C NEXT GENERATION OPIR - Ground</b>	<b>0</b>	<b>542,477</b>
Transfer from line 22 for project 657106 Next-Gen OPIR Ground		504,577
Space Force requested realignment		37,900
<b>24 NATIONAL SECURITY SPACE LAUNCH PROGRAM (SPACE) - EMD</b>	<b>221,510</b>	<b>201,510</b>
Inadequate justification - enabling technologies		-20,000
<b>25 SPACE TEST AND TRAINING RANGE DEVELOPMENT</b>	<b>19,319</b>	<b>69,819</b>
Program increase - cyber training range		17,500
Program increase - advance threat simulation environment		33,000
<b>28 MAJOR T&amp;E INVESTMENT - SPACE</b>	<b>71,503</b>	<b>86,503</b>
Program increase - lab and test range upgrades for space		15,000

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R-1		Budget Request	Final Bill
30	TACTICALLY RESPONSIVE LAUNCH Program increase	0	50,000 50,000
36	NARROWBAND SATELLITE COMMUNICATIONS Analysis of alternatives inadequate justification Program increase - L-Band communications	112,012	110,012 -5,000 3,000
41	SPACELIFT RANGE SYSTEM (SPACE) Program increase - space launch range services and capabilitie	11,115	31,115 20,000
49	GLOBAL POSITIONING SYSTEM III - OPERATIONAL CONTROL SEGMENT OCX unjustified growth	413,766	402,532 -11,234
999	CLASSIFIED PROGRAMS Classified adjustment	4,474,809	4,563,309 88,500

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## SPACE FORCE ACQUISITION

The agreement provides the full amount requested for the Space Warfighting Analysis Center (SWAC) and is supportive of the work the SWAC is doing to inform architecture and acquisition decisions. However, concerns persist that the analytical and decision-making process within the Space Force is overly complex and convoluted and that responsibilities and authorities below the Secretary level are unclear and sometimes contradictory. Therefore, the agreement directs the Secretary of the Air Force, not to be delegated, to submit to the congressional defense committees, not later than 60 days after the enactment of this Act, a report that includes a draft mission directive; clarification of the roles and responsibilities of senior civilian and uniformed leaders with space responsibilities; organizational alignment of the acquisition units of the Space Force, to include the SWAC, Space Development Agency, Space Rapid Capabilities Office, and space programs in the Department of the Air Force Rapid Capabilities Office; and a plan to ensure the Assistant Secretary of the Air Force for Space Acquisition and Integration has the resources, responsibilities, and authorities necessary for success.

## NEXT GENERATION OVERHEAD PERSISTENT INFRARED

The agreement directs the Secretary of the Air Force to submit the fiscal year 2023 budget submission with distinct budget lines and program elements for the Geosynchronous Earth Orbit, Polar, and Ground efforts. The agreement recognizes that the Space Force is considering alternative architecture plans for a more resilient and more capable missile warning and missile tracking system but notes that the Department of Defense and the Administration have not reached a consensus on whether or how quickly to pursue a new path. Therefore, the agreement directs the Secretary of the Air Force to promptly notify the congressional defense committees of any significant change to the current architecture and program plans prior to obligating any funds or taking contract

actions for such change. Last, the agreement continues previous direction for the Secretary of the Air Force to provide quarterly briefings to the congressional defense committees on the status of the program.

#### SPACE FORCE UNIQUE SCIENCE AND TECHNOLOGY

The agreement recognizes that science and technology programs can have shared goals and leverage advancements in research areas that cut across both the air and space domains. While there are clear benefits to cross-domain multi-disciplinary investments, it can result in an increased level of complexity in allocating resources to the appropriate Service appropriations accounts for technology discovery and application efforts early in the research and development (R&D) phase. The agreement notes that space unique capabilities and those programs executed out of the Space Vehicles Directorate at the Air Force Research Lab, are more appropriately budgeted in the Research, Development, Test and Evaluation, Space Force account. Therefore, the Secretary of the Air Force is directed to provide a comprehensive proposal to the congressional defense committees to establish an objective, transparent, and effective means to align the Department of the Air Force's science and technology resources across the R&D continuum, not later than 90 days after the enactment of this Act.

#### COMMERCIAL TECHNOLOGIES

Existing and emerging commercial solutions have the potential to meet certain mission sets of the United States Space Force (USSF), including communications, space domain awareness, and intelligence, surveillance, and reconnaissance. The USSF and other space organizations within the Department have publicly championed a hybrid space architecture that includes a combination of government and commercial space vehicles and Services. However, the agreement notes that the USSF is slow to prioritize

commercial offerings into its enterprise architecture and dedicate sufficient resources to continue advancements in enabling technologies, such as encryption technologies necessary for a ubiquitous hybrid architecture. Therefore, the agreement directs the Commander of Space Systems Command, not later than 90 days after the enactment of this Act, to provide the congressional defense committees a report detailing the strategy to integrate commercial satellites across its mission sets and a future years defense program resource profile by appropriation and line item dedicated to these efforts. The report shall address the tools needed to advance the operational integration of commercial systems into a hybrid enterprise management system and address what acquisition models will be used to facilitate cost effective and efficient purchase of commercial systems and Services.

#### TACTICALLY RESPONSIVE SPACE

The Department of Defense Appropriations Act, 2021 (Public Law 116–260) appropriated \$15,000,000 for investments in tactically responsive space launch capabilities. Further, section 1609 of the National Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283) directed the Secretary of the Air Force to establish a Tactically Responsive Space Launch program within the future years defense program. However, the fiscal year 2022 President’s budget request does not include any resources to establish the program this fiscal year despite a need to counter adversarial launches of disruptive technologies in a tactically relevant timeline. Therefore, the agreement provides \$50,000,000 for Tactically Responsive Launch efforts. Further, the agreement directs the Secretary of the Air Force, in consultation with the Chief of Space Operations, not later than 90 days after the enactment of this Act, to provide the congressional defense committees with an acquisition strategy that operationalizes a tactically responsive space capability, including satellites, launch vehicles, control systems, and

concept of operations, as well as the resource profile associated with the strategy across the future years defense program.

#### NUCLEAR PROPULSION TECHNOLOGY

Traditional solar array technologies for space vehicle power generation provide limited power sourcing and degrade over time. The agreement notes that nuclear propulsion technology has the potential to increase the lifespan, range, and communications capabilities of space vehicles enabling the Space Force to develop new space architectures, as well as modified tactics, techniques, and procedures for operation within existing architectures. Therefore, the agreement directs the Secretary of the Air Force, in coordination with the Chief of Space Operations, not later than 90 days after the enactment of this Act, to provide a report to the congressional defense committees on the technical maturity, cost, benefits, and risks associated with nuclear propulsion technology in space.



RESEARCH, DEVELOPMENT, TEST AND EVALUATION,  
DEFENSE-WIDE

The agreement provides \$29,065,786,000 for Research, Development, Test and Evaluation, Defense-Wide, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT 130A-P

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE		
1	BASIC RESEARCH DTRA UNIVERSITY STRATEGIC PARTNERSHIP BASIC RESEARCH..	11,828 11,828
2	DEFENSE RESEARCH SCIENCES.....	395,781 445,781
3	HIGH ENERGY LASER RESEARCH INITIATIVES.....	15,390 20,390
4	BASIC RESEARCH INITIATIVES.....	39,828 76,828
5	BASIC OPERATIONAL MEDICAL RESEARCH SCIENCE.....	76,018 77,518
6	NATIONAL DEFENSE EDUCATION PROGRAM.....	112,195 145,195
7	HISTORICALLY BLACK COLLEGES & UNIV (HBCU).....	31,136 100,000
8	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM.....	34,708 37,208
	TOTAL, BASIC RESEARCH.....	716,884 914,748
APPLIED RESEARCH		
9	JOINT MUNITIONS TECHNOLOGY.....	19,591 20,591
10	BIOMEDICAL TECHNOLOGY.....	108,698 108,698
12	DEFENSE TECHNOLOGY INNOVATION.....	22,918 17,500
13	LINCOLN LABORATORY RESEARCH PROGRAM.....	55,692 55,692
14	APPLIED RESEARCH FOR ADVANCEMENT S&T PRIORITIES.....	65,015 59,187
15	INFORMATION AND COMMUNICATIONS TECHNOLOGY.....	430,363 480,363
16	BIOLOGICAL WARFARE DEFENSE.....	31,421 31,421
17	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM.....	206,956 209,956
18	CYBER SECURITY RESEARCH.....	15,380 25,380
19	TACTICAL TECHNOLOGY.....	202,515 207,515
20	MATERIALS AND BIOLOGICAL TECHNOLOGY.....	317,024 308,024
21	ELECTRONICS TECHNOLOGY.....	357,384 393,384
22	COUNTER WEAPONS OF MASS DESTRUCTION DEFEAT TECHNOLOGIES.....	197,011 197,011
23	SOFTWARE ENGINEERING INSTITUTE (SEI) APPLIED RESEARCH.	9,601 9,601
24	HIGH ENERGY LASER RESEARCH.....	45,997 45,997
25	SOF TECHNOLOGY DEVELOPMENT.....	44,829 51,329
	TOTAL, APPLIED RESEARCH.....	2,130,395 2,221,649
ADVANCED TECHNOLOGY DEVELOPMENT		
26	JOINT MUNITIONS ADVANCED TECH INSENSITIVE MUNITIONS AD	23,213 30,213
27	SO/LIC ADVANCED DEVELOPMENT.....	4,665 4,665
28	COMBATING TERRORISM TECHNOLOGY SUPPORT.....	69,376 141,876
29	FOREIGN COMPARATIVE TESTING.....	25,432 25,432

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
31 COUNTER WEAPONS OF MASS DESTRUCTION ADVANCED TECHNOLOGY DEVELOPMENT.....	399,362	409,862
32 ADVANCED CONCEPTS AND PERFORMANCE ASSESSMENT.....	15,800	40,000
33 ADVANCED RESEARCH.....	21,466	47,966
34 JOINT HYPERSONIC TECHNOLOGY DEVELOPMENT &TRANSITION.,.,	51,340	51,340
35 JOINT DOD-DOE MUNITIONS TECHNOLOGY DEVELOPMENT.....	19,063	19,063
36 ADVANCED AEROSPACE SYSTEMS.....	174,043	194,043
37 SPACE PROGRAMS AND TECHNOLOGY.....	101,524	181,524
38 ANALYTIC ASSESSMENTS.....	24,012	24,012
39 ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS.....	51,513	46,513
42 DEFENSE MODERNIZATION AND PROTOTYPING.....	115,443	96,943
43 DEFENSE INNOVATION UNIT .....	31,873	26,849
44 TECHNOLOGY INNOVATION.....	54,433	39,933
45 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM - ADVANCED DEV	197,824	197,824
46 RETRACT LARCH.....	99,175	99,175
47 JOINT ELECTRONIC ADVANCED TECHNOLOGY.....	18,221	18,221
48 JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS.....	102,669	102,669
49 NETWORKED COMMUNICATIONS CAPABILITIES.....	2,984	2,984
50 DEFENSE-WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROG	134,022	255,667
51 MANUFACTURING TECHNOLOGY PROGRAM.....	37,543	83,543
53 GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS.....	12,418	12,418
54 STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM.....	51,863	91,863
55 MICROELECTRONIC TECHNOLOGY DEVELOPMENT AND SUPPORT....	160,821	209,821
56 JOINT WARFIGHTING PROGRAM.....	2,169	2,169
57 ADVANCED ELECTRONICS TECHNOLOGIES.....	116,716	140,716
58 COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS.....	251,794	251,794
59 NETWORK-CENTRIC WARFARE TECHNOLOGY.....	584,771	655,771
60 SENSOR TECHNOLOGY.....	294,792	294,792
61 DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT..	6,398	6,398
62 SOFTWARE ENGINEERING INSTITUTE.....	14,677	14,677
65 HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM.....	107,397	83,497
66 TEST & EVALUATION SCIENCE & TECHNOLOGY.....	267,161	465,161
67 NATIONAL SECURITY INNOVATION NETWORK.....	21,270	36,270
68 OPERATIONAL ENERGY CAPABILITY IMPROVEMENT.....	74,300	108,900
74 SOF ADVANCED TECHNOLOGY DEVELOPMENT.....	93,415	112,415

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
75 SPACE SCIENCE AND TECHNOLOGY RESEARCH AND DEVELOPMENT..	172,638	172,638
TOTAL, ADVANCED TECHNOLOGY DEVELOPMENT.....	4,007,596	4,799,617
76 ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT..	28,687	28,687
77 WALKOFF.....	108,652	108,652
79 ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM	71,429	123,139
80 BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT...	277,949	213,382
81 BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT...	745,144	725,028
82 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM.....	129,445	133,945
83 BALLISTIC MISSILE DEFENSE SENSORS.....	224,750	254,962
84 BALLISTIC MISSILE DEFENSE ENABLING PROGRAMS.....	595,301	623,644
85 SPECIAL PROGRAMS - MDA.....	413,374	413,374
86 AEGIS BMD.....	732,512	639,549
87 BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT.....	603,448	564,946
88 BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT.....	50,594	50,594
89 MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC).....	52,403	52,403
90 REGARDING TRENCH.....	11,952	11,952
91 SEA BASED X-BAND RADAR (SBX).....	147,241	147,241
92 ISRAELI COOPERATIVE PROGRAMS.....	300,000	300,000
93 BALLISTIC MISSILE DEFENSE TEST.....	362,906	389,156
94 BALLISTIC MISSILE DEFENSE TARGETS.....	553,334	560,478
96 COALITION WARFARE.....	5,103	5,103
97 NEXT GENERATION INFORMATION COMMUNICATIONS TECHNOLOGY (5G).....	374,665	337,665
98 DEPARTMENT OF DEFENSE CORROSION PROGRAM.....	3,259	3,259
99 GUAM DEFENSE DEVELOPMENT.....	78,300	112,400
100 TECHNOLOGY MATURATION INITIATIVES.....	---	39,200
103 HYPERSONIC DEFENSE.....	247,931	287,796
104 ADVANCED INNOVATIVE TECHNOLOGIES.....	716,456	779,456
105 TRUSTED AND ASSURED MICROELECTRONICS.....	509,195	705,695
106 RAPID PROTOTYPING PROGRAM.....	103,575	137,675
107 DEFENSE INNOVATION UNIT (DIU) PROTOTYPING.....	11,213	16,213
108 DEPARTMENT OF DEFENSE (DOD) UNMANNED SYSTEM COMMON DEVELOPMENT.....	2,778	7,778

1300

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
109 CATAPULT.....	7,166	7,166
110 OPERATIONAL ENERGY CAPABILITY IMPROVEMENT - NON S&T...	23,200	23,200
111 HOMELAND DEFENSE RADAR-HAWAII.....	---	75,000
113 WARGAMING AND SUPPORT FOR STRATEGIC ANALYSIS (SSA)....	3,519	3,519
114 JOINT C5 CAPABILITY DEVELOPMENT, INTEGRATION AND INTEROPERABILITY.....	17,439	17,439
115 LONG RANGE DISCRIMINATION RADAR.....	133,335	133,335
116 IMPROVED HOMELAND DEFENSE INTERCEPTORS.....	926,125	884,125
117 BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT TEST.....	32,697	32,697
118 AEGIS BMD TEST.....	117,055	111,206
119 BALLISTIC MISSILE DEFENSE SENSOR TEST.....	77,428	77,428
120 LAND-BASED SM-3 (LBSM3).....	43,158	43,158
121 BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT TEST.....	61,424	61,424
122 SAFETY PROGRAM MANAGEMENT.....	2,323	2,323
123 ENTERPRISE INFORMATION TECHNOLOGY SYSTEMS.....	2,568	2,568
125 CYBER SECURITY INITIATIVE.....	1,142	1,142
126 SPACE TECHNOLOGY DEVELOPMENT AND PROTOTYPING.....	636,179	1,204,179
127 SPACE TRACKING AND SURVEILLANCE SYSTEM.....	15,176	15,176
128 BALLISTIC MISSILE DEFENSE SYSEM SPACE PROGRAMS.....	292,811	292,811
TOTAL, DEMONSTRATION & VALIDATION.....	9,854,341	10,761,268
129 ENGINEERING & MANUFACTURING DEVELOPMENT NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT...	5,682	5,682
131 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM.....	299,848	299,848
132 JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)	9,345	21,345
133 COUNTER WEAPONS OF MASS DESTRUCTION SYSTEMS DEVELOPMENT.....	14,063	14,063
134 INFORMATION TECHNOLOGY DEVELOPMENT.....	4,265	4,265
135 HOMELAND PERSONNEL SECURITY INITIATIVE.....	7,205	7,205
136 DEFENSE EXPORTABILITY PROGRAM.....	5,447	5,447
137 OUSD(C) IT DEVELOPMENT INITIATIVES.....	16,892	16,892
138 DOD ENTERPRISE SYSTEMS DEVELOPMENT AND DEMONSTRATION...	679	679
140 DEFENSE AGENCY INITIATIVES FINANCIAL SYSTEM.....	32,254	32,254
142 MISSION ASSURANCE RISK MANAGEMENT SYSTEM (MARMS).....	5,500	5,500
143 DEFENSE-WIDE ELECTRONIC PROCUREMENT CAPABILITIES.....	7,148	7,148

1300

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
144 TRUSTED & ASSURED MICROELECTRONICS.....	113,895	113,895
146 NUCLEAR COMMAND, CONTROL, & COMMUNICATIONS.....	3,991	3,991
149 DOD ENTERPRISE ENERGY INFORMATION MANAGEMENT (EEIM)...	2,227	2,227
150 CWMD SYSTEMS: SYSTEM DEVELOPMENT AND DEMONSTRATION....	20,246	20,246
TOTAL, ENGINEERING & MANUFACTURING DEVELOPMENT.....	548,687	560,687
MANAGEMENT SUPPORT		
151 JOINT CAPABILITY EXPERIMENTATION.....	8,444	8,444
152 DEFENSE READINESS REPORTING SYSTEM (DRRS).....	7,508	7,508
153 JOINT SYSTEMS ARCHITECTURE DEVELOPMENT.....	7,859	7,859
154 CENTRAL TEST AND EVALUATION INVESTMENT DEVELOPMENT....	550,140	994,618
155 ASSESSMENTS AND EVALUATIONS.....	17,980	17,980
156 MISSION SUPPORT.....	73,145	73,145
157 JOINT MISSION ENVIRONMENT TEST CAPABILITY (JMETC).....	71,410	71,410
159 JOINT INTEGRATED AIR AND MISSILE DEFENSE ORGANIZATION..	52,671	52,671
160 CLASSIFIED PROGRAM USD(P).....	---	108,112
161 SYSTEMS ENGINEERING.....	40,030	40,030
162 STUDIES AND ANALYSIS SUPPORT.....	4,612	4,612
163 NUCLEAR MATTERS - PHYSICAL SECURITY.....	14,429	14,429
164 SUPPORT TO NETWORKS AND INFORMATION INTEGRATION.....	4,759	4,759
165 GENERAL SUPPORT TO USD (INTELLIGENCE).....	1,952	10,452
166 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM.....	110,503	115,503
SMALL BUSINESS INNOVATION RESEARCH (SBIR)/ SMALL 172 BUSINESS TECHNOLOGY TRANSFER.....	3,639	3,639
173 MAINTAINING TECHNOLOGY ADVANTAGE.....	25,889	26,889
174 DEFENSE TECHNOLOGY ANALYSIS.....	39,774	35,274
175 DEFENSE TECHNICAL INFORMATION CENTER (DTIC).....	61,453	61,453
176 R&D IN SUPPORT OF DOD ENLISTMENT, TESTING & EVALUATION	18,762	21,762
177 DEVELOPMENT TEST AND EVALUATION.....	27,366	27,366
178 MANAGEMENT HQ - R&D.....	12,740	12,740
MANAGEMENT HQ - DEFENSE TECHNICAL INFORMATION CENTER 179 (DTIC).....	3,549	3,549
180 BUDGET AND PROGRAM ASSESSMENTS.....	15,438	13,994
181 ODNA TECHNOLOGY AND RESOURCE ANALYSIS.....	2,897	4,897
182 DEFENSE DIGITAL SERVICE (DDS) DEVELOPMENT SUPPORT.....	918	918
183 CYBER RESILIENCY AND CYBERSECURITY POLICY.....	31,638	31,638

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
184 DEFENSE OPERATIONS SECURITY (DOSI).....	2,925	2,925
185 JOINT STAFF ANALYTICAL SUPPORT.....	977	977
186 C4I INTEROPERABILITY.....	55,361	55,361
189 INFORMATION SYSTEMS SECURITY PROGRAM.....	853	853
191 DEFENSE MILITARY DECEPTION PROGRAM OFFICE.....	969	969
192 COMBINED ADVANCED APPLICATIONS.....	15,696	15,696
194 DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS.....	3,073	3,073
197 COCOM EXERCISE ENGAGEMENT AND TRAINING TRANSFORMATION.....	29,530	29,530
198 DEFENSE EQUAL OPPORTUNITY MANAGEMENT INSTITUTE (DEQMI)	689	689
199 MANAGEMENT HEADQUARTERS - MDA.....	24,102	24,102
200 JOINT SERVICE PROVIDER (JSP).....	2,645	2,645
9999 CLASSIFIED PROGRAMS.....	37,520	37,520
TOTAL, RDT&E MANAGEMENT SUPPORT.....	1,383,845	1,949,991
OPERATIONAL SYSTEMS DEVELOPMENT		
202 ENTERPRISE SECURITY SYSTEM (ESS).....	5,355	5,355
203 JOINT ARTIFICIAL INTELLIGENCE.....	10,033	148,447
206 INDUSTRIAL BASE ANALYSIS AND SUSTAINMENT SUPPORT.....	58,189	335,739
207 CWMD SYSTEMS: OPERATIONAL SYSTEMS DEVELOPMENT.....	18,721	18,721
208 GLOBAL THEATER SECURITY COOPERATION MANAGEMENT.....	7,398	7,398
CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS 209 DEVELOPMENT).....	58,261	58,261
215 DEFENSE INFO INFRASTRUCTURE ENGINEERING & INTEGRATION.....	16,233	16,233
216 LONG HAUL COMMUNICATIONS (DCS).....	10,275	10,275
217 MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK.....	4,892	4,892
218 KEY MANAGEMENT INFRASTRUCTURE (KMI).....	83,751	83,751
219 INFORMATION SYSTEMS SECURITY PROGRAM.....	49,191	69,191
220 INFORMATION SYSTEMS SECURITY PROGRAM.....	423,745	447,745
221 INFORMATION SYSTEMS SECURITY PROGRAM.....	5,707	5,707
222 GLOBAL COMMAND AND CONTROL SYSTEM.....	4,150	4,150
223 DEFENSE SPECTRUM ORGANIZATION.....	19,302	19,302
224 JOINT REGIONAL SECURITY STACKS (JRSS).....	9,342	9,342
226 FEDERAL INVESTIGATIVE SERVICES INFORMATION TECHNOLOGY.....	15,326	15,326
232 SECURITY AND INVESTIGATIVE ACTIVITIES.....	8,800	8,800
235 DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES.....	3,820	3,820

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(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
237 POLICY R&D PROGRAMS.....	4,843	4,843
238 NET CENTRICITY.....	13,471	13,471
240 DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS.....	5,994	5,994
246 INSIDER THREAT.....	---	3,000
247 HOMELAND DEFENSE TECHNOLOGY TRANSFER PROGRAM.....	1,273	1,273
255 LOGISTICS SUPPORT ACTIVITIES.....	1,690	1,690
256 PACIFIC DISASTER CENTERS.....	1,799	5,799
257 DEFENSE PROPERTY ACCOUNTABILITY SYSTEM.....	6,390	6,390
259 MQ-9 UAV.....	19,065	63,065
261 AVIATION SYSTEMS.....	173,537	173,537
262 INTELLIGENCE SYSTEMS DEVELOPMENT.....	32,766	30,399
263 OPERATIONAL ENHANCEMENTS.....	145,830	179,230
264 WARRIOR SYSTEMS.....	78,592	125,473
265 SPECIAL PROGRAMS.....	6,486	10,486
266 UNMANNED ISR.....	18,006	18,006
267 SOF TACTICAL VEHICLES.....	7,703	7,703
268 MARITIME SYSTEMS.....	58,430	62,630
270 OPERATIONAL ENHANCEMENTS INTELLIGENCE.....	10,990	15,990
TOTAL, OPERATIONAL SYSTEMS DEVELOPMENT.....	1,399,356	2,001,434
999 CLASSIFIED PROGRAMS.....	5,208,029	5,434,289
272 JOINT ARTIFICIAL INTELLIGENCE.....	186,639	---
273 NATIONAL BACKGROUND INVESTIGATION SERVICES - SOFTWARE PILOT PROGRAM.....	123,570	123,570
274 ACQUISITION VISIBILITY - SOFTWARE PILOT PROGRAM.....	18,307	18,307
275 GLOBAL COMMAND AND CONTROL SYSTEM.....	32,774	32,774
276 ALGORITHMIC WARFARE CROSS FUNCTIONAL TEAMS - SOFTWARE PILOT PROGRAM.....	247,452	247,452
TOTAL, RESEARCH, DEVELOPMENT, TEST & EVALUATION, DEFENSE-WIDE.....	25,857,875	29,065,786

(130G)



**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
 [In thousands of dollars]

R-1	Budget Request	Final Bill
<b>2 DEFENSE RESEARCH SCIENCES</b>	<b>395,781</b>	<b>445,781</b>
Program increase - ERI 2.0		20,000
Program increase - AI, cyber, and data analytics		30,000
<b>3 HIGH ENERGY LASER RESEARCH INITIATIVES</b>	<b>15,390</b>	<b>20,390</b>
Program increase - high energy laser research		5,000
<b>4 BASIC RESEARCH INITIATIVES</b>	<b>39,828</b>	<b>76,828</b>
Program increase - asymmetric threat analysis		8,000
Program increase - Minerva		10,000
Program increase - DEPSCOR		19,000
<b>5 BASIC OPERATIONAL MEDICAL RESEARCH SCIENCE</b>	<b>76,018</b>	<b>77,518</b>
Project increase - novel analytical and empirical approaches to the prediction and monitoring of disease transmission		1,500
<b>6 NATIONAL DEFENSE EDUCATION PROGRAM</b>	<b>112,195</b>	<b>145,195</b>
Program increase - SMART diversification activities		2,000
Program increase - STEM programs		14,000
Program increase - civics education		2,000
Program increase - civil society		15,000
<b>HISTORICALLY BLACK COLLEGES &amp; UNIVERSITIES (HBCU) AND</b>		
<b>7 MINORITY-SERVING INSTITUTIONS</b>	<b>31,136</b>	<b>100,000</b>
Program increase		68,864
<b>8 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM</b>	<b>34,708</b>	<b>37,208</b>
Program increase - chemically resistant, high-performance military cordage, rope, and webbing		2,500
<b>9 JOINT MUNITIONS TECHNOLOGY</b>	<b>19,591</b>	<b>20,591</b>
Project increase - next generation explosives and propellants		1,000
<b>12 DEFENSE TECHNOLOGY INNOVATION</b>	<b>22,918</b>	<b>17,500</b>
Insufficient justification		-5,418
<b>APPLIED RESEARCH FOR THE ADVANCEMENT OF S&amp;T</b>		
<b>14 PRIORITIES</b>	<b>65,015</b>	<b>59,187</b>
Unjustified growth		-5,828
<b>15 INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	<b>430,363</b>	<b>480,363</b>
Project increase - quantum computing		25,000
Program increase - AI, cyber, and data analytics		25,000
<b>17 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM</b>	<b>206,956</b>	<b>209,956</b>
Program increase - tularemia medical countermeasure		3,000
<b>18 CYBER SECURITY RESEARCH</b>	<b>15,380</b>	<b>25,380</b>
Program increase - academic cyber institutes		10,000

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R-1		Budget Request	Final Bill
19	<b>TACTICAL TECHNOLOGY</b>	<b>202,515</b>	<b>207,515</b>
	Underexecution		-10,000
	Program increase - AI, cyber, and data analytics		15,000
20	<b>MATERIALS AND BIOLOGICAL TECHNOLOGY</b>	<b>317,024</b>	<b>308,024</b>
	Unjustified increase		-9,000
21	<b>ELECTRONICS TECHNOLOGY</b>	<b>357,384</b>	<b>393,384</b>
	Program increase - ERI 2.0		36,000
25	<b>SPECIAL OPERATIONS TECHNOLOGY DEVELOPMENT</b>	<b>44,829</b>	<b>51,329</b>
	Program increase - LRUSV asymmetric strike and decoy package		1,500
	Program increase - sustained human performance and resilience		5,000
26	<b>JOINT MUNITIONS ADVANCED TECHNOLOGY</b>	<b>23,213</b>	<b>30,213</b>
	Program increase - energetics revitalization		7,000
28	<b>COMBATING TERRORISM TECHNOLOGY SUPPORT</b>	<b>69,376</b>	<b>141,876</b>
	Program increase - anti-tunneling		47,500
	Program increase - cooperative C-UAS development		25,000
31	<b>COUNTER WEAPONS OF MASS DESTRUCTION ADVANCED TECHNOLOGY DEVELOPMENT</b>	<b>399,362</b>	<b>409,862</b>
	Program increase - data-driven methods of nuclear weapon discovery		4,000
	Program increase - detection and tracking technology		4,000
	Program increase - reduced order models		2,500
32	<b>ADVANCED CONCEPTS AND PERFORMANCE ASSESSMENT</b>	<b>15,800</b>	<b>40,000</b>
	Program increase - cyber operations		9,000
	Program increase - hypersonic kill vehicles hardware in the loop upgrades		10,000
	Program increase - cybersecurity		5,200
33	<b>ADVANCED RESEARCH</b>	<b>21,466</b>	<b>47,966</b>
	Program increase - 3D printed high temperature nickel based alloys for hypersonic applications		4,000
	Program increase - Benzoxazine for high-mach system thermal protection		5,000
	Program increase - high speed flight experiment testing		12,500
	Program increase - laser weapons optics tech risk mitigation		5,000
36	<b>ADVANCED AEROSPACE SYSTEMS</b>	<b>174,043</b>	<b>194,043</b>
	Program increase - hypersonics risk reduction		20,000
37	<b>SPACE PROGRAMS AND TECHNOLOGY</b>	<b>101,524</b>	<b>181,524</b>
	Program increase - hypersonics risk reduction		80,000
39	<b>ADVANCED INNOVATIVE ANALYSIS AND CONCEPTS</b>	<b>51,513</b>	<b>46,513</b>
	Unjustified growth		-5,000

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R-1	Budget Request	Final Bill
<b>42 DEFENSE MODERNIZATION AND PROTOTYPING</b>	<b>115,443</b>	<b>96,943</b>
Program increase - emerging capabilities technology development hypersonics modeling and simulation center of excellence		4,600
Transfer from p721, Conceptual Prototyping to support DoD Modernization Priorities, to line 106, for RDER projects only		-34,100
Program increase - open source intelligence		3,000
Program increase - ship-based multi-sensor prototype development and demonstration		8,000
<b>43 DEFENSE INNOVATION UNIT (DIU)</b>	<b>31,873</b>	<b>26,849</b>
Unjustified increase		-5,024
<b>44 TECHNOLOGY INNOVATION</b>	<b>54,433</b>	<b>39,933</b>
Unjustified growth		-14,500
<b>DEFENSE-WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROGRAM</b>		
<b>50 PROGRAM</b>	<b>134,022</b>	<b>255,667</b>
Project increase - cybersecurity manufacturing innovation park		1,000
Project increase - automation engineering technology program		1,981
Project increase - El Paso Makes contract support for El Paso manufacturers		964
Program increase		9,000
Program increase - difficult-to-copy manufacturing		7,000
Program increase - certification-based workforce training programs for manufacturing jobs of the future		6,200
Program increase - silicon based lasers		10,000
Program increase - carbon composites for hypersonics		3,000
Program increase - high temperature carbon composites manufacturing		3,000
Program increase - hypersonic enabling additive manufacturing		10,000
Program increase - hypersonic thermal management research		5,000
Program increase - advanced manufacturing		2,000
Program increase - advanced materials and materials manufacturing processes		6,000
Program increase - high performance computing - enabled advanced manufacturing		25,000
Program increase - domestic textile manufacturing		7,500
Program increase - data analytics and visualization system		12,000
Program increase - natural gas pipeline pilot study		5,000
Program increase - virtual reality-enabled smart installation experimentation		5,000
Program increase - advanced robotics and automation training		2,000
<b>51 MANUFACTURING TECHNOLOGY PROGRAM</b>	<b>37,543</b>	<b>83,543</b>
Program increase - steel performance initiative		10,000
Program increase - supply chain for readiness and sustainment		8,000
Program increase - rare earth recovery technology		2,000
Program increase - conversion of titanium scrap		5,000
Program increase - graphite materials		9,000
Program increase - nanostructured iron nitride permanent magnets		7,000
Program increase - PFAS compounds in food packaging materials research		3,000
Program increase - modeling and simulation competition		2,000

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R-1	Budget Request	Final Bill
<b>54 STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM</b>	<b>51,863</b>	<b>91,863</b>
Program increase - PFAS remediation and disposal technology		15,000
Program increase - AFFF replacement, disposal, and cleanup technology		15,000
Program increase		10,000
<b>MICROELECTRONICS TECHNOLOGY DEVELOPMENT AND SUPPORT</b>	<b>160,821</b>	<b>209,821</b>
Program increase - qualified discrete parts		5,000
Program increase - GaN-on-Si RF Front-end		30,000
Program increase - on-shore test site		9,000
Program increase - silicon carbide applications		5,000
<b>57 ADVANCED ELECTRONICS TECHNOLOGIES</b>	<b>116,716</b>	<b>140,716</b>
Program increase - ERI 2.0		24,000
<b>59 NETWORK-CENTRIC WARFARE TECHNOLOGY</b>	<b>584,771</b>	<b>655,771</b>
Program increase - deployable surveillance systems		21,000
Program increase - Assault Breaker II acceleration		50,000
<b>65 HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM</b>	<b>107,397</b>	<b>83,497</b>
Additional HELSI directed energy system excess to Phase II requirement		-23,900
<b>66 TEST &amp; EVALUATION SCIENCE &amp; TECHNOLOGY</b>	<b>267,161</b>	<b>465,161</b>
Unjustified growth		-10,000
Program increase - space testing facilities		10,000
Program increase - lab and test range upgrades - space		33,000
Program increase - advancements to large energy national shock tunnels		20,000
Program increase - lab and test range upgrades - electromagnetic spectrum		30,000
Program increase - lab and test range upgrades - directed energy		11,000
Program increase - lab and test range upgrades - targets		41,000
Program increase - improving capacity hypersonics flight tests		63,000
<b>67 NATIONAL SECURITY INNOVATION NETWORK</b>	<b>21,270</b>	<b>36,270</b>
Program increase		10,000
Program increase - national security innovation network		5,000
<b>68 OPERATIONAL ENERGY CAPABILITY IMPROVEMENT</b>	<b>74,300</b>	<b>108,900</b>
Program increase - advanced thermal systems for directed energy		11,600
Program increase - TRISO advanced nuclear fuel		10,000
Program increase - climate programs		13,000
<b>74 SOF ADVANCED TECHNOLOGY DEVELOPMENT</b>	<b>93,415</b>	<b>112,415</b>
Project increase - assessing and tracking tactical forces initiative		4,000
Project increase - identity threat mitigation and force protection initiative		15,000
<b>ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM</b>	<b>71,429</b>	<b>123,139</b>
Program increase - PFAS remediation and disposal technology		28,710
Program increase - AFFF replacement, disposal, and cleanup technology		5,000
Program increase - PFAS destruction technologies		15,000
Program increase - sustainable technology evaluation and demonstration program		3,000

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R-1		Budget Request	Final Bill
80	<b>BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT</b> Layered homeland defense lack of requirement	277,949	213,382 -64,567
81	<b>BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT</b> Layered homeland defense lack of requirement Increment 9 unjustified cost growth	745,144	725,028 -9,997 -10,119
82	<b>CHEMICAL AND BIOLOGICAL DEFENSE PROGRAMS</b> Program increase - development of medical countermeasures against novel entities (DOMANE)	129,445	133,945 4,500
83	<b>BALLISTIC MISSILE DEFENSE SENSORS</b> Program increase - cybersecurity Program increase - HWIL and digital modeling capabilities for IMTP	224,750	254,962 3,012 27,200
84	<b>BALLISTIC MISSILE DEFENSE ENABLING PROGRAMS</b> Layered homeland defense lack of requirement Program increase - cybersecurity Program increase - cybersecurity engineering	595,301	623,644 -16,487 25,317 19,513
86	<b>AEGIS BMD</b> Layered homeland defense lack of requirement Program increase - lightweight telescope for advanced AEGIS interceptor	732,512	639,549 -98,963 6,000
87	<b>BALLISTIC MISSILE DEFENSE C2BMC</b> Layered homeland defense lack of requirement Program increase - cybersecurity Program increase - JADC2 interface	603,448	564,946 -44,978 2,000 4,476
93	<b>BMD TESTS</b> Program increase - test infrastructure improvements	362,906	389,156 26,250
94	<b>BMD TARGETS</b> Layered homeland defense lack of requirement FTM-30 delay FTM-42 delay FTT-25 delay Program increase - architecture reactive target simulation development Program increase - missile defense system architecture integration and analysis center prototype	553,334	560,478 -9,127 -2,624 -264 -5,841 20,000 5,000
	<b>NEXT GENERATION INFORMATION COMMUNICATIONS</b>		
97	<b>TECHNOLOGY (5G)</b> Tranche 2 growth without transition plans External engagement - unjustified and excess growth	374,665	337,665 -32,000 -5,000
99	<b>GUAM DEFENSE DEVELOPMENT</b> Delayed architecture submission Program increase - Guam Defense System acceleration	78,300	112,400 -5,900 40,000

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R-1	Budget Request	Final Bill
<b>100 TECHNOLOGY MATURATION INITIATIVES</b>	<b>0</b>	<b>39,200</b>
Program increase - directed energy		33,200
Program increase - diode pumped alkali laser		6,000
<b>103 HYPERSONIC DEFENSE</b>	<b>247,931</b>	<b>287,796</b>
Program increase - partnered flight test participation		18,000
Program increase - engineering enablers		11,865
Program increase - disruptive technologies for future architectures		10,000
<b>104 ADVANCED INNOVATIVE TECHNOLOGIES</b>	<b>716,456</b>	<b>779,456</b>
Program increase - pele mobile nuclear microreactor		60,000
Program increase - predictive autonomous navigational routing system phase II		3,000
<b>105 TRUSTED &amp; ASSURED MICROELECTRONICS</b>	<b>509,195</b>	<b>705,695</b>
Program increase - radiation-hardened fully-depleted silicon-on-insulator microelectronics		18,000
Program increase - GaN and GaAs RFIC technology		25,000
Program increase - advanced node radiation-hardened fully-depleted silicon-on-insulator technology		43,500
Program increase - trusted artificial intelligence		10,000
Program increase - design acceleration		100,000
Joint Federated Assurance Center	[9,000]	[9,000]
Foundry	[45,000]	[45,000]
Secure design and quantifiable assurance development	[243,195]	[243,195]
Access to advanced packaging and testing - development	[112,600]	[112,600]
Address DoD unique needs especially radiation hardening - development	[82,700]	[82,700]
Create a resilient and robust microelectronics pipeline - development	[16,700]	[16,700]
<b>106 RAPID PROTOTYPING PROGRAM</b>	<b>103,575</b>	<b>137,675</b>
Transfer from line 42, p721, for RDER projects only		34,100
<b>107 DEFENSE INNOVATION UNIT (DIU) PROTOTYPING</b>	<b>11,213</b>	<b>16,213</b>
Program increase - long duration energy storage, including lithium batteries		5,000
<b>DOD UNMANNED AIRCRAFT SYSTEM (UAS) COMMON</b>		
<b>108 DEVELOPMENT</b>	<b>2,778</b>	<b>7,778</b>
Program increase - unmanned traffic management		5,000
<b>111 HOMELAND DEFENSE RADAR - HAWAII</b>	<b>0</b>	<b>75,000</b>
Program increase - Homeland defense radar - Hawaii		75,000
<b>116 IMPROVED HOMELAND DEFENSE INTERCEPTORS</b>	<b>926,125</b>	<b>884,125</b>
Next generation interceptor funds phasing		-42,000
<b>118 AEGIS BMD TEST</b>	<b>117,055</b>	<b>111,206</b>
Layered homeland defense lack of requirement		-5,849

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R-1	Budget Request	Final Bill
<b>126 SPACE TECHNOLOGY DEVELOPMENT AND PROTOTYPING</b>	<b>636,179</b>	<b>1,204,179</b>
Transfer SDA Tranche 1 satellite cost savings to SDA Tranche 1 launch integration		-20,000
Transfer SDA Tranche 1 satellite cost savings to P,DW line 48 for SDA NSSL Tranche 1 launch		-12,000
Transfer from SDA Tranche 1 satellite cost savings to SDA Tranche 1 launch integration		20,000
Program increase - laser communication router demonstration system		12,000
Program increase - space networking center		18,000
Program increase - INDOPACOM missile tracking demonstration		550,000
<b>132 JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)</b>	<b>9,345</b>	<b>21,345</b>
Program increase - cyber resilience and analysis capability for installation and missile resiliency		12,000
<b>144 TRUSTED &amp; ASSURED MICROELECTRONICS</b>	<b>113,895</b>	<b>113,895</b>
Foundry	[4,000]	[4,000]
Secure design and quantifiable assurance demonstration	[47,298]	[47,298]
Access to advanced packaging and testing - demonstration	[41,797]	[41,797]
Address DoD unique needs especially radiation hardening - demonstration	[20,800]	[20,800]
<b>154 CENTRAL TEST &amp; EVAL INVESTMENT DEVELOPMENT</b>	<b>550,140</b>	<b>994,618</b>
Program increase - hypersonic test facilities		29,500
Program increase - AESA radars for test infrastructure		200,000
Program increase - C-band and X-band decoy systems for test infrastructure		40,000
Program increase - lab and test range upgrades - electromagnetic spectrum		105,478
Program increase - lab and test range upgrades - hypersonics		36,000
Program increase - lab and test range upgrades - directed energy		11,000
Program increase - lab and test range upgrades - targets		18,000
Program increase - lab and test range upgrades - telemetry extension SATCOM relay		4,500
<b>160 CLASSIFIED PROGRAM USD(P)</b>	<b>0</b>	<b>108,112</b>
Classified adjustment		108,112
<b>165 GENERAL SUPPORT TO USD (INTELLIGENCE)</b>	<b>1,952</b>	<b>10,452</b>
Program increase - applied research laboratory for intelligence and security		8,500
<b>166 CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM</b>	<b>110,503</b>	<b>115,503</b>
Program increase - biological weapons testing		5,000
<b>173 MAINTAINING TECHNOLOGY ADVANTAGE</b>	<b>25,889</b>	<b>26,889</b>
Program increase - securing American science and technology program		1,000
<b>174 DEFENSE TECHNOLOGY ANALYSIS</b>	<b>39,774</b>	<b>35,274</b>
Excess growth		-7,500
Program increase - technology and transition enhancement and acceleration		3,000

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R-1	Budget Request	Final Bill
<b>R&amp;D IN SUPPORT OF DOD ENLISTMENT, TESTING &amp; EVALUATION</b>	<b>18,762</b>	<b>21,762</b>
Program increase - implementation of the Independent Review Commission on Sexual Assault in the Military		3,000
<b>180 BUDGET AND PROGRAM ASSESSMENTS</b>	<b>15,438</b>	<b>13,994</b>
Lack of congressional support		-1,444
<b>181 ODNA TECHNOLOGY AND RESOURCE ANALYSIS</b>	<b>2,897</b>	<b>4,897</b>
Program increase - rapidly scalable resilient communications		2,000
<b>203 JOINT ARTIFICIAL INTELLIGENCE</b>	<b>10,033</b>	<b>148,447</b>
Transfer from line 272		186,639
Transfer to OMDW, line 4GT9 for proper execution - responsible AI (RAI)		-4,250
Transfer to OMDW, line 4GT9 for proper execution - strategy and policy		-4,775
Transfer to OMDW, line 4GT9 for proper execution - JCF/infrastructure		-19,800
Transfer to OMDW, line 4GT9 for proper execution - PB&A		-750
Program adjustment - gargoye expansion		-9,150
Program adjustment - ceres duplication		-5,500
Program adjustment - horae duplication		-4,000
<b>206 INDUSTRIAL BASE ANALYSIS AND SUSTAINMENT SUPPORT</b>	<b>58,189</b>	<b>335,739</b>
Project increase - systems engineering technician education initiative		550
Program increase		10,000
Program increase - digital thread manufacturing demonstration		8,000
Program increase - heavy rare earth elements program		80,000
Program increase - rare earth separation technologies		4,000
Program increase - career and technical education pilot		10,000
Program increase - digital engineering enabled workforce development		7,000
Program increase - enhanced digital capabilities		7,000
Program increase - ruggedized transceivers		10,000
Program increase - freeze dried plasma		10,000
Program increase - submarine workforce development		20,000
Program increase - resilient manufacturing ecosystem		2,500
Program increase - lead-free electronics		7,500
Program increase - precision optics manufacturing		4,000
Program increase - machine tooling and advanced manufacturing		20,000
Program increase - metal-organic frameworks		7,500
Program increase - weldable ultra hard armor		3,000
Program increase - pilot mask technology		5,000
Program increase - advanced headborne systems manufacturing		7,500
Program increase - automated textile manufacturing		10,000
Program increase - carbon/carbon industrial base enhancement		6,000
Program increase - defense supply chain enhancement		10,000
Program increase - industrial skills initiative		10,000
Program increase - interdisciplinary center for advanced manufacturing		10,000
Program increase - rare earth elements and critical minerals recovery technique demonstration		3,000
Program increase - accelerated training in defense manufacturing		5,000
<b>219 INFORMATION SYSTEMS SECURITY PROGRAM</b>	<b>49,191</b>	<b>69,191</b>
Program increase - center for academic excellence		20,000

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R-1	Budget Request	Final Bill
<b>220 INFORMATION SYSTEMS SECURITY PROGRAM</b>	<b>423,745</b>	<b>447,745</b>
Program increase - cyber activities at senior military colleges		24,000
<b>246 INSIDER THREAT</b>	<b>0</b>	<b>3,000</b>
Program increase		3,000
<b>256 PACIFIC DISASTER CENTERS</b>	<b>1,799</b>	<b>5,799</b>
Program increase - global water security center		4,000
<b>259 MQ-9 UAV</b>	<b>19,065</b>	<b>63,065</b>
Program increase - speed loader agile pod		10,000
Program increase - self protection pods		34,000
<b>SPECIAL OPERATIONS INTELLIGENCE SYSTEMS</b>		
<b>262 DEVELOPMENT</b>	<b>32,766</b>	<b>30,399</b>
MMP program decrease		-2,367
<b>263 SOF OPERATIONAL ENHANCEMENTS</b>	<b>145,830</b>	<b>179,230</b>
Program increase - classified adjustment		12,000
Program increase - AISUM		21,400
<b>264 WARRIOR SYSTEMS</b>	<b>78,592</b>	<b>125,473</b>
Program increase - special operations fused global data analytics and visualization		8,000
Program increase - software-defined radio waveforms		10,000
Program increase - maritime scalable effects acceleration		4,211
Program increase - various effects launcher capability		16,000
Program increase - cUAS		8,670
<b>265 SPECIAL PROGRAMS</b>	<b>6,486</b>	<b>10,486</b>
Program increase - overmatch visual augmentation		4,000
<b>268 SOF MARITIME SYSTEMS</b>	<b>58,430</b>	<b>62,630</b>
Program increase - diver propulsion		4,200
<b>270 SOF OPERATIONAL ENHANCEMENTS INTELLIGENCE</b>	<b>10,990</b>	<b>15,990</b>
Program increase - carbon fiber and graphitic foam		5,000
<b>272 JOINT ARTIFICIAL INTELLIGENCE</b>	<b>186,639</b>	<b>0</b>
Transfer to line 203 for lack of budget activity 08 justification		-186,639
<b>999 CLASSIFIED PROGRAMS</b>	<b>5,208,029</b>	<b>5,434,289</b>
Classified adjustment		226,260

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## RAPID DEFENSE EXPERIMENTATION RESERVE

It is understood that the Secretary of Defense plans to request funds under a new “Rapid Defense Experimentation Reserve” (RDER) budget line in the Research, Development, Test and Evaluation, Defense-Wide (RDTE,DW) account in future budget submissions for prototyping and experimentation as part of a campaign of learning, and to close the “valley of death”. Projects funded under the RDER program would facilitate exploration and transition of technologies to full adoption by the Services and enable more rapid modernization.

The agreement supports this concept in principle. However, it is noted that the RDTE,DW account already contains several budget lines for programs intended for such purposes, to include programs to bridge the valley of death; support high-priority, mission-aligned prototyping; address joint warfighting operational gaps; and transition technologies. Further, it is noted that these budget lines contain significant funding flexibility in the year of execution. Therefore, the establishment of the new RDER program should be accompanied by a critical review of these programs and projects, including, but not limited to, the Defense Modernization and Prototyping Program, the Joint Capability Technology Program, and the Rapid Prototyping Program, to ensure that funds support direct warfighter needs.

The agreement realigns some such duplicate funding only for the RDER program in fiscal year 2022, as detailed in the table of Explanation of Project Level Adjustments accompanying this section. The Deputy Secretary of Defense is directed to review the scope and purpose of existing prototyping, experimentation, and demonstration programs funded within RDTE,DW to avoid redundancy and overlap with RDER, and to recommend adjustments to funding streams and management structures with the fiscal year 2023 President’s budget request.

## COMMERCIAL SATELLITE IMAGERY

The availability and value of high-quality commercial satellite imagery to support a wide range of national security applications, including intelligence, military operations, disaster relief and response, and scientific research is increasing rapidly. However, there is concern that the federal government is not adequately leveraging its buying power to ensure the best value and is not minimizing the redundancy and duplication of purchases across all departments, agencies, and offices, including government-sponsored activities at non-profit organizations and academic institutions.

Therefore, the agreement directs the Comptroller General to provide a report to the congressional defense committees, not later than 180 days after the enactment of this Act, with an inventory of contracts for commercial imagery products and Services across the national security community; a determination of the effectiveness of coordination on procurements for these products and Services; an identification of any areas where there is duplication or redundant procurements; and recommendations on actions to improve the coordination, efficiency, and effectiveness of procurements for commercial satellite imagery and related Services.

## SUPPLY CHAIN RISK MANAGEMENT

Sections 845 and 847 of the National Defense Authorization Act for fiscal year 2020 require the Department of Defense to use technology and analytic tools to expand its efforts to identify, mitigate, and monitor supply chain risks, including foreign ownership, control, and influence (FOCI) across the classified and unclassified defense industrial base. The Defense Counterintelligence and Security Agency's (DCSA's) Critical Technology Protection Directorate supports the Department's efforts to comply with these new requirements for protecting supply chains aimed at further reducing defense industrial base risks.

In addition, the agreement directs the Under Secretary of Defense for Intelligence and Security to provide a report to the House and Senate Appropriations Committees not later than 60 days after the enactment of this Act that enumerates and discusses the distinct analytic tools and innovative technological enhancements in which the DCSA is investing to assess, mitigate, and continuously monitor FOCI in Department of Defense contracts and subcontracts.

SPACE DEVELOPMENT AGENCY UNITED STATES INDO-PACIFIC COMMAND  
MISSILE TRACKING DEMONSTRATION

The fiscal year 2022 President's budget request includes \$882,887,000 in the Research, Development, Test and Evaluation, Defense-Wide and Procurement, Defense-Wide accounts to develop, integrate, test, and launch 28 transport and tracking satellites as part of the Space Development Agency's (SDA) Tranche 0 capability acquisition. Further, the budget request includes funds to initiate development of SDA's Tranche 1 capability to begin filling out the proliferated National Defense Space Architecture (NDSA). It is noted that subsequent to the budget submission, SDA changed the launch strategy for Tranche 1 from a "delivery on orbit" to using the National Security Space Launch (NSSL) Phase 2 contract. This revised approach is supported and adjustments are recommended only to reflect that revised launch strategy for Tranche 1 consistent with previous congressional direction, as detailed in the table of Explanation of Project Level adjustments accompanying this section. It is noted that any change to this revised launch strategy for Tranche 1 is subject to the criteria contained under the heading "National Security Space Launch" included in the "Procurement, Space Force" section of this joint explanatory statement.

It is understood that the U.S. Indo-Pacific Command (USINDOPACOM) has a need for additional wide and medium field of view satellites (W/MFOV) that are not

included in Tranche 0 or Tranche 1 of the NDSA. These satellites provide intelligence and warning, tracking, and targeting of missile threats. The agreement includes \$550,000,000 only for such a satellite demonstration for USINDOPACOM, to be managed and executed only by SDA. The Director, SDA is directed to provide to the congressional defense committees an updated cost estimate to address USINDOPACOM's W/MFOV requirements, to include an acquisition and contract strategy not later than 30 days after the enactment of this Act. Direction regarding the procurement of launch Services included elsewhere in this statement under the heading "National Security Space Launch" shall also apply to these funds.

#### DEFENSE ADVANCED RESEARCH PROJECTS AGENCY ASSAULT BREAKER II

The fiscal year 2022 President's budget request includes \$51,154,000 for DARPA's Assault Breaker II (AB II) initiative. The agreement includes an additional \$50,000,000 only to accelerate AB II development in the U.S. Indo-Pacific Command, increase the pace of experiments, and enhance the modeling and simulation environment. Further direction with respect to AB II is included the classified annex accompanying this Act.

#### DARPA HYPERSONICS AND SPACE RISK REDUCTION

The fiscal year 2022 President's budget request includes \$121,067,000 for DARPA to continue risk reduction, development, and testing of hypersonics weapons and space capabilities, to include the Hypersonic Air-Breathing Weapon Concept, Tactical Boost Glide, Blackjack, and Robotic Servicing of Geosynchronous Satellites. The agreement includes an additional \$100,000,000, only for these programs in Research, Development, Test and Evaluation, Defense-Wide program elements 0603286E and 0603287E. It is directed that none of these additional funds may be obligated or expended until 60 days

after the Director of DARPA, in coordination with the respective transition service leads, briefs the congressional defense committees on a spend plan and schedule for these funds, to include partner funding and transition plans.

#### DARPA ELECTRONICS RESURGENCE INITIATIVE 2.0

The fiscal year 2022 President's budget request includes \$330,500,000 for DARPA's Electronics Resurgence Initiative 2.0 (ERI 2.0). ERI 1.0 aimed to forge forward-looking collaborations among the commercial electronics community, the defense industrial base, university researchers, and the Department of Defense to ensure far-reaching improvements in electronics performance. It is understood that under ERI 2.0, DARPA will build on these efforts and continue investment in dual-use research, adding new areas relevant to manufacturing and national security. The agreement includes an additional \$80,000,000 to accelerate ERI 2.0. It is directed that none of the additional funds may be obligated or expended until 60 days after the Director of DARPA, briefs the congressional defense committees on a strategy for ERI 2.0, to include an update on collaborations established under ERI and DARPA's role within the Department of Defense microelectronics enterprise and strategy.

#### RESEARCH, DEVELOPMENT, TEST AND EVALUATION, DEFENSE-WIDE PROGRAM ELEMENT STRUCTURE

The fiscal year 2022 President's budget request proposes the consolidation of several smaller budget lines/projects into larger budget lines, and proposes substantial growth for several budget lines that contain significant internal funding execution flexibility. It is noted that this particularly impacts the Defense Threat Reduction Agency and Chemical Biological Defense Program budget lines. Given the critical nature of these agencies' missions, these respective budget requests are supported in the

agreement. However, the Under Secretary of Defense (Comptroller) and the Director of Cost Assessment and Program Evaluation are directed to review the program element structure of the Research, Development, Test and Evaluation, Defense-Wide appropriations account to inform the fiscal year 2023 President's budget request.

#### CYBER EDUCATION DIVERSITY INITIATIVE

The Secretary of Defense is directed to provide to the congressional defense committees with submission of the fiscal year 2023 President's budget request, a report on the scope, scale, and impact of the Cyber Education Diversity Initiative. The report should detail the number and nature of participating institutions, funds expended in support of the initiative, and an initial evaluation of the impact on cyber education.

#### SCIENCE, TECHNOLOGY, ENGINEERING AND MATH (STEM) PROGRAMS

The agreement includes an additional \$14,000,000 for STEM programs. The Secretary of Defense is encouraged to partner with organizations with an established history of providing scholarships to students pursuing an education in these fields.

#### CIVIL SOCIETY

The agreement includes \$15,000,000 for civil society programs. The Secretary of Defense is directed to work with universities with ethics and public affairs programs to promote civil society education and outreach, including among military and non-military communities.

#### HYPERSONIC TESTING FACILITY REACTIVATION

The agreement provides \$29,500,000 in Research, Development, Test and Evaluation, Defense-Wide for hypersonic test facilities to carry out the activities

necessary for the reactivation of previously decommissioned synthetic air hypersonic propulsion test facilities, including expenses necessary for the relocation of affected NASA capabilities or facilities.

#### BIOINDUSTRIAL CAPABILITIES AND MANUFACTURING TECHNOLOGIES

There continues to be need for U.S. biotechnology innovation and securing the domestic bioindustrial base. A Bioindustrial Manufacturing Innovation Institute has been established to provide a reliable American source of bioindustrial capabilities and manufacturing technologies. It is noted that the Department remains committed to this effort and that Congress has reaffirmed support for the effort to accelerate biotechnology modernization by providing funding for the institute. The agreement encourages the Under Secretary of Defense (Research and Engineering) to work closely with the partners involved and provide a briefing to the House and Senate Appropriations Committees, Subcommittees on Defense not later than 45 days after enactment of this Act with details of specific capabilities envisioned for the institute, along with a timeline and cost projection in order to deliver those capabilities.



## OPERATIONAL TEST AND EVALUATION, DEFENSE

The agreement provides \$276,591,000 for Operational Test and Evaluation, Defense, as follows:

### EXPLANATION OF PROJECT LEVEL ADJUSTMENTS [In thousands of dollars]

	Budget Request	Final Bill
<b>OPERATIONAL TEST AND EVALUATION</b> .....	<b>105,394</b>	<b>105,394</b>
<b>LIVE FIRE TESTING</b> .....	<b>68,549</b>	<b>103,549</b>
Program increase - lab and test range upgrades - space		9,000
Program increase - lab and test range upgrades - electromagnetic spectrum		13,000
Program increase - lab and test range upgrades - hypersonics		7,000
Program increase - lab and test range upgrades - targets		6,000
<b>OPERATIONAL TEST ACTIVITIES AND ANALYSIS</b> .....	<b>42,648</b>	<b>67,648</b>
Program increase - lab and test range upgrades - directed energy		12,000
Program increase - lab and test range upgrades - targets		13,000
<b>TOTAL, OPERATIONAL TEST &amp; EVALUATION, DEFENSE</b>	<b>216,591</b>	<b>276,591</b>

#### CERTIFICATION OF FUNDING FOR TEST INFRASTRUCTURE AND TEST EVENT RESOURCES

It is concerning that funding required for test and evaluation infrastructure, assets, and personnel is routinely placed at risk by the Department of Defense and the Services during the budget planning and formulation process. Therefore, the Director of Operational Test and Evaluation, is directed to assess and certify to the congressional defense committees with submission of the fiscal year 2023 President's budget request that the Department of Defense's and Services' test infrastructure, assets, and personnel are fully funded in the budget year and the future years defense program to support agreed-upon Test and Evaluation Master Plans for major defense acquisition programs and test assessments for prototyping programs. Further, the Director of Operational Test

and Evaluation, is directed to identify – where applicable – shortfalls by service and program.

## TITLE V - REVOLVING AND MANAGEMENT FUNDS

The agreement provides \$2,017,000,000 in Title V, Revolving and Management Funds.

### DEFENSE WORKING CAPITAL FUNDS

The agreement provides \$2,017,000,000 for Defense Working Capital Funds, as follows:

#### EXPLANATION OF PROJECT LEVEL ADJUSTMENTS [In thousands of dollars]

	Budget Request	Final Bill
<b>WORKING CAPITAL FUND, ARMY</b>	<b>384,711</b>	<b>499,711</b>
Industrial Operations	26,935	26,935
Program increase - Arsenals Initiative		115,000
Supply Management	357,776	357,776
<b>WORKING CAPITAL FUND, NAVY</b>	<b>150,000</b>	<b>150,000</b>
Supply Management	150,000	150,000
<b>WORKING CAPITAL FUND, AIR FORCE</b>	<b>77,453</b>	<b>77,453</b>
Supply Management	77,453	77,453
<b>WORKING CAPITAL FUND, DEFENSE-WIDE</b>	<b>127,765</b>	<b>127,765</b>
Energy Management	40,000	40,000
Supply Chain Management	87,765	87,765
<b>DEFENSE WORKING CAPITAL FUND, DECA</b>	<b>1,162,071</b>	<b>1,162,071</b>
<b>TOTAL, DEFENSE WORKING CAPITAL FUNDS</b>	<b>1,902,000</b>	<b>2,017,000</b>

#### ADVANCE BILLING LIMITATION FOR WORKING CAPITAL FUNDS

The agreement includes a general provision that doubles the allowable amount of advance billing of a customer of a working capital fund for fiscal year 2022 only. The

Secretary of Defense is encouraged to work with the congressional defense committees to seek an exception to the dollar limitation imposed by section 2208(1)(3) of title 10 in the event of a declaration of a national emergency by the President.

## TITLE VI - OTHER DEPARTMENT OF DEFENSE PROGRAMS

The agreement provides \$39,808,546,000 in Title VI, Other Department of Defense Programs, as follows:

~~(INSERT OTHER DOD PROGRAMS SUMMARY TABLE)~~ 2

INSERT (142A)

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
-----		
TITLE VI		
OTHER DEPARTMENT OF DEFENSE PROGRAMS		
Defense Health Program		
Operation and maintenance.....	34,182,719	33,957,986
Procurement.....	779,008	758,708
Research, development, test and evaluation.....	630,680	2,633,488
Total, Defense Health Program 1/.....	35,592,407	37,350,182
Chemical Agents and Munitions Destruction, Defense:		
Operation and maintenance.....	93,121	93,121
Procurement.....	---	---
Research, development, test and evaluation.....	1,001,231	1,001,231
Total, Chemical Agents 2/.....	1,094,352	1,094,352
Drug Interdiction and Counter-Drug Activities, Defense1/.....	821,908	925,649
Office of the Inspector General 1/.....	438,363	438,363
	=====	=====
Total, title VI, Other Department of Defense Programs.....	37,947,030	39,808,546
	=====	=====

142A

## DEFENSE HEALTH PROGRAM

The agreement provides \$37,350,182,000 for the Defense Health Program, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT (143A-C)

~~(INSERT PROJECT LEVEL TABLE)~~

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
DEFENSE HEALTH PROGRAM		
OPERATION AND MAINTENANCE		
10	IN-HOUSE CARE.....	9,720,004 9,566,792
20	PRIVATE SECTOR CARE.....	18,092,679 17,977,979
30	CONSOLIDATED HEALTH SUPPORT.....	1,541,122 1,514,397
40	INFORMATION MANAGEMENT.....	2,233,677 2,231,149
50	MANAGEMENT ACTIVITIES.....	335,138 333,138
60	EDUCATION AND TRAINING.....	333,234 340,734
70	BASE OPERATIONS/COMMUNICATIONS.....	1,926,865 1,993,797
	SUBTOTAL, OPERATION AND MAINTENANCE.....	34,182,719 33,957,986
PROCUREMENT		
150	INITIAL OUTFITTING.....	20,926 20,926
160	REPLACEMENT AND MODERNIZATION.....	250,366 250,366
180	MILITARY HEALTH SYSTEM - DESKTOP TO DATACENTER.....	72,302 72,302
180	DOD HEALTH MANAGEMENT SYSTEM MODERNIZATION.....	435,414 415,114
	SUBTOTAL, PROCUREMENT.....	779,008 758,708
RESEARCH DEVELOPMENT TEST AND EVALUATION		
80	RESEARCH.....	9,091 9,091
90	EXPLORATORY DEVELOPMENT.....	75,463 85,463
100	ADVANCED DEVELOPMENT.....	235,556 345,556
110	DEMONSTRATION/VALIDATION.....	142,252 176,860
120	ENGINEERING DEVELOPMENT.....	101,054 101,054
130	MANAGEMENT AND SUPPORT.....	49,645 49,645
140	CAPABILITIES ENHANCEMENT.....	17,619 17,619
150	UNDISTRIBUTED MEDICAL RESEARCH.....	--- 1,848,200
	SUBTOTAL, RESEARCH DEVELOPMENT TEST AND EVALUATION.....	630,680 2,633,488
	TOTAL, DEFENSE HEALTH PROGRAM.....	35,592,407 37,350,182

143A



**EXPLANATION OF PROJECT LEVEL ADJUSTMENTS**  
**[In thousands of dollars]**

	<b>Budget Request</b>	<b>Final Bill</b>
<b>OPERATION AND MAINTENANCE</b>		
<b>IN-HOUSE CARE</b>	<b>9,720,004</b>	<b>9,566,792</b>
Unjustified cost growth		-27,800
Excess funding for capability replacement		-104,462
Medical care contracts excess growth		-25,950
Program increase - telehealth for military children and families		5,000
<b>PRIVATE SECTOR CARE</b>	<b>18,092,679</b>	<b>17,977,979</b>
Unjustified cost growth		-90,900
Unjustified support services growth		-23,800
<b>CONSOLIDATED HEALTH SUPPORT</b>	<b>1,541,122</b>	<b>1,514,397</b>
Medical care contracts excess growth		-22,325
Unjustified cost growth		-21,900
Program increase - anomalous health incidents care capacity		3,500
Program increase - therapeutic service dog training program		14,000
<b>INFORMATION MANAGEMENT</b>	<b>2,233,677</b>	<b>2,231,149</b>
DHMSM excess growth		-2,528
<b>MANAGEMENT ACTIVITIES</b>	<b>335,138</b>	<b>333,138</b>
Equipment purchases excess growth		-2,000
<b>EDUCATION AND TRAINING</b>	<b>333,234</b>	<b>340,734</b>
Program increase - specialized medical pilot program		2,500
Program increase - Uniformed Services University of the Health Sciences fetal alcohol spectrum disorders prevention and clinical guidelines research		5,000
<b>BASE OPERATIONS AND COMMUNICATIONS</b>	<b>1,926,865</b>	<b>1,993,797</b>
Program increase - FSRM		78,000
Equipment purchases excess growth		-11,068
<b>TOTAL, OPERATION AND MAINTENANCE</b>	<b>34,182,719</b>	<b>33,957,986</b>
<b>PROCUREMENT</b>		
Excess growth		-20,300
<b>TOTAL, PROCUREMENT</b>	<b>779,008</b>	<b>758,708</b>
<b>RESEARCH AND DEVELOPMENT</b>		
Program increase - Armed Forces Institute of Regenerative Medicine III		10,000
Program increase - clinical research		10,000
Program increase - Uniformed Services University of the Health Sciences military surgical teams simulation technology		5,000
Program increase - Uniformed Services University of the Health Sciences multi-domain operations		35,000

143B

	Budget Request	Final Bill
Program increase - GDF - medical products support and advanced concept development		5,608
Program increase - NDMS medical surge pilot		15,000
Program increase - joint civilian-medical surge facility		14,000
Program increase - brain injury and disease prevention research		60,000
Restore core funding reduction		312,200
Peer-reviewed alcohol and substance use disorders research		4,000
Peer-reviewed ALS research		40,000
Peer-reviewed alzheimer research		15,000
Peer-reviewed autism research		15,000
Peer-reviewed bone marrow failure disease research		7,500
Peer-reviewed breast cancer research		150,000
Peer-reviewed cancer research		130,000
Peer-reviewed Duchenne muscular dystrophy research		10,000
Peer-reviewed epilepsy research		12,000
Peer-reviewed hearing restoration research		10,000
Peer-reviewed kidney cancer research		50,000
Peer-reviewed lung cancer research		20,000
Peer-reviewed lupus research		10,000
Peer-reviewed medical research		370,000
Peer-reviewed melanoma research		40,000
Peer-reviewed multiple sclerosis research		20,000
Peer-reviewed orthopedic research		30,000
Peer-reviewed ovarian cancer research		45,000
Peer-reviewed pancreatic cancer research		15,000
Peer-reviewed prostate cancer research		110,000
Peer-reviewed rare cancers research		17,500
Peer-reviewed reconstructive transplant research		12,000
Peer-reviewed spinal cord research		40,000
Peer-reviewed tickborne disease research		7,000
Peer-reviewed toxic exposures research		30,000
Peer-reviewed traumatic brain injury and psychological health research		175,000
Peer-reviewed tuberous sclerosis complex research		8,000
Peer-reviewed vision research		20,000
Global HIV/AIDS prevention		10,000
HIV/AIDS program increase		18,000
Joint warfighter medical research		40,000
Orthotics and prosthetics outcome research		20,000
Chronic pain management		15,000
Trauma clinical research program		10,000
Combat readiness medical research		10,000
<b>TOTAL, RESEARCH AND DEVELOPMENT</b>	<b>630,680</b>	<b>2,633,488</b>

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#### REPROGRAMMING GUIDANCE FOR THE DEFENSE HEALTH PROGRAM

The agreement directs that the In-House Care and Private Sector Care budget sub-activities remain designated as congressional special interest items. Any transfer of funds into or out of these sub-activities requires the Secretary of Defense to follow prior approval reprogramming procedures. The Secretary of Defense is further directed to provide a report to the congressional defense committees not later than 30 days after the enactment of this Act that delineates transfers of funds and the dates they occurred from the Private Sector Care budget sub-activity to any other budget sub-activity in fiscal year 2021.

The Assistant Secretary of Defense for Health Affairs is directed to provide quarterly reports and briefings to the congressional defense committees on budget execution data for all of the Defense Health Program budget activities not later than 30 days after the end of each fiscal quarter and to adequately reflect changes to the budget activities requested by the Services in future budget submissions.

#### CARRYOVER

The agreement provides one percent carryover authority for the Operation and Maintenance account of the Defense Health Program. The Assistant Secretary of Defense for Health Affairs is directed to submit a detailed spend plan for any fiscal year 2021 designated carryover funds to the congressional defense committees not less than 30 days prior to executing the carryover funds.

#### PEER-REVIEWED CANCER RESEARCH PROGRAM

The agreement provides \$130,000,000 for the peer-reviewed cancer research program to research cancers not addressed in the breast, pancreatic, prostate, ovarian, kidney, lung, melanoma, and rare cancer research programs.

The funds provided in the peer-reviewed cancer research program are directed to be used to conduct research in the following areas: bladder cancer; blood cancers; brain cancer; colorectal cancer; endometrial cancer; esophageal cancer; germ cell cancers; head and neck cancer; liver cancer; lymphoma; mesothelioma; metastatic cancers; myeloma; neuroblastoma; pediatric brain tumors; pediatric, adolescent, and young adult cancers; sarcoma; stomach cancer; thyroid cancer; and Von Hippel-Lindau syndrome malignancies (excluding cancers of the kidney and pancreas).

The peer-reviewed cancer research program shall be used only for the purposes listed above. The inclusion of the individual rare cancer research program shall not prohibit the peer-reviewed cancer research program from funding the above-mentioned cancers or cancer subtypes that may be rare by definition. The report directed under this heading in House Report 117-88 is still required to be provided not later than 12 months after the enactment of this Act.

#### PEER-REVIEWED MEDICAL RESEARCH PROGRAM

The agreement provides \$370,000,000 for a peer-reviewed medical research program. The Secretary of Defense, in conjunction with the Service Surgeons General, is directed to select medical research projects of clear scientific merit and direct relevance to military health. Research areas considered under this funding are restricted to: arthritis, cardiomyopathy, congenital heart disease, diabetes, dystonia, eating disorders, viral diseases, endometriosis, epidermolysis bullosa, familial hypercholesterolemia, fibrous dysplasia, focal segmental glomerulosclerosis, food allergies, Fragile X, frontotemporal degeneration, Guillain-Barre syndrome, hemorrhage control, hepatitis B, hydrocephalus, hypercholesterolemia, hypertension, inflammatory bowel diseases, interstitial cystitis, malaria, mitochondrial disease, myalgic encephalomyelitis/chronic fatigue syndrome, myotonic dystrophy, nephrotic syndrome, non-opioid therapy for pain

management, nutrition optimization, pathogen-inactivated blood products, peripheral neuropathy, plant-based vaccines, platelet like cell production, polycystic kidney disease, pressure ulcers, pulmonary fibrosis, respiratory health, Rett syndrome, rheumatoid arthritis, sleep disorders and restriction, suicide prevention, sustained release drug delivery, trauma, vascular malformations, women's heart disease, Ehlers-Danlos syndrome, pancreatitis, musculoskeletal disorders related to acute and chronic bone conditions and injuries, and Friedreich's ataxia. The additional funding provided under the peer-reviewed medical research program shall be devoted only to the purposes listed above.

#### ELECTRONIC HEALTH RECORDS

The agreement directs the Secretary of Defense to provide a report to the congressional defense committees not later than 90 days after the enactment of this Act on the status of the installation of all remaining information technology and related infrastructure required to complete the deployment of the electronic health record system, including the timeline to complete installation and costs associated, if the Department accelerated the deployment timeline.

The agreement directs the Comptroller General to continue quarterly performance reviews of the deployment of MHS GENESIS with a focus on whether the program is meeting expected cost, schedule, scope, quality, and risk mitigation expectations. It is expected that the Program Executive Officer of Defense Healthcare Management Systems (PEO DHMS) will facilitate quarterly performance reviews by providing the Comptroller General with regular and in-depth access to the program.

The agreement directs the PEO DHMS to provide monthly reports not later than 15 days after the end of each month to the congressional defense committees on the status of all open incident reports, as well as the 46 high priority incident reports, in order to better

track the progress of resolving the issues identified in the initial deployment of MHS GENESIS. The PEO DHMS, in conjunction with the Director of the Interagency Program Office and the Director of the Defense Health Agency, is directed to provide quarterly reports not later than 30 days after the end of each fiscal quarter to the congressional defense committees and the Government Accountability Office on the cost of the program, including indirect costs being funded outside of the DHMS Modernization Electronic Health Record program and schedule of the program, to include milestones, knowledge points, and acquisition timelines, as well as quarterly obligation reports.

The Director of the Interagency Program Office is directed to provide quarterly reports to the House and Senate Appropriations Committees, Subcommittees on Defense and Military Construction, Veterans Affairs, and Related Agencies on the progress of interoperability between the two Departments.

#### JOINT WARFIGHTER MEDICAL RESEARCH PROGRAM

The Assistant Secretary of Defense for Health Affairs is directed to submit a report, not later than 12 months after the enactment of this Act, to the congressional defense committees that lists the projects that receive funding under the Joint Warfighter Medical Research Program. The report shall include the funding amount awarded to each project, a thorough description of each project's research, and the benefit the research will provide to the Department of Defense.

#### TRAUMATIC BRAIN INJURY/PSYCHOLOGICAL HEALTH

The Assistant Secretary of Defense for Health Affairs is directed to submit a report to the congressional defense committees not later than 18 months after the enactment of

this Act on expenditure and obligation data of additional funding added by Congress for psychological health and traumatic brain injury.

#### ORTHOTICS AND PROSTHETICS OUTCOMES RESEARCH

The Assistant Secretary of Defense for Health Affairs is directed to provide a report, not later than 18 months after the enactment of this Act, to the congressional defense committees on the peer-reviewed projects that receive funding under the Orthotics and Prosthetics Outcomes research funding line. The report shall include the funding amount awarded to each project and the anticipated effect on patient care.

#### CHRONIC PAIN MANAGEMENT RESEARCH

The funds provided in the chronic pain management research program shall be used to conduct research on the effects of using prescription opioids to manage chronic pain and for researching alternatives, namely non-opioid or non-addictive methods to treat and manage chronic pain, with a focus on issues related to military populations.

#### DEPARTMENT OF DEFENSE CONTROLLED ACCESS TO HEALTH INFORMATION

The Assistant Secretary of Defense for Health Affairs is directed to provide a report, not later than 180 days after the enactment of this Act, to the congressional defense committees, detailing the implementation of Office of Inspector General (OIG) recommendations related to effectively controlling access to health information of Department of Defense personnel. The report shall include any additional cybersecurity measures taken as a result of the OIG's findings.

## MILITARY TREATMENT FACILITY TRANSITION

The agreement notes that the military departments continue to have a significant role in the administration of the military treatment facilities (MTF), especially the transition of more than 40 functional capabilities identified in the Defense Health Agency's (DHA) implementation plan that are wide-ranging, including capabilities like military personnel management, acquisitions, religious support services, clinical operations, and clinical quality. The agreement directs the Comptroller General to provide the congressional defense committees a report not later than 90 days after the enactment of this Act on the status of the transition of MTFs to the DHA. The report shall include (1) a review of functions at facilities that have already transitioned, including DHA's role or management and the administration support that the Services are providing and a timeline for that support to cease; (2) cost implications of the transition, including the Department's plan for maximizing efficiencies and reducing duplication; (3) the current and planned DHA staffing model; and (4) how the DHA will ensure that the Services' medical requirements are considered and met. The agreement further directs the Department to continue to provide any updates regarding the MTF transition directly to the congressional defense committees in a timely manner in order to facilitate appropriate congressional oversight.

## REDUCTION OF MILITARY BILLETS

The agreement does not include funding requested in the fiscal year 2022 President's budget request for a reduction in military medical providers in order to increase the number of operational billets required for lethality. The Section 719 Report to Congress on Military Medical Reductions to Meet Operational Requirements was submitted in August 2021, and the agreement finds that questions and concerns remain, especially related to analysis of military medical manpower requirements, market



adequacy assumptions, and the ability to hire civilian or contract replacements. The agreement directs the Assistant Secretary of Defense for Health Affairs to brief the congressional defense committees not later than 60 days after the enactment of this Act on the Department's efforts to respond to reports about the quality and availability of civilian providers, along with other concerns raised in the May 2020 Government Accountability Office evaluation regarding the restructuring plan of military treatment facilities.

#### PEER-REVIEWED TOXIC EXPOSURES RESEARCH PROGRAM

The agreement notes the number of known and unknown potentially harmful substances that servicemembers are exposed to as part of their military service. Research linked to exposures through various congressionally directed medical research programs, including the Peer-Reviewed Neurotoxin Exposure Treatment Parkinson's Research Program, started in 1997 with a focus on dopaminergic neurons that result in Parkinson's disease. Since 2006, the Peer-Reviewed Gulf War Illness Research Program has also received congressionally directed funding to study the health impacts caused by deployment of warfighters during the Persian Gulf War. The agreement remains committed to helping veterans affected by Parkinson's disease, Gulf War illness, and others exposed to potentially toxic substances which result in multiple, diverse symptoms and health abnormalities.

Transitioning related research to a new, broader program, including neurotoxin exposure treatment research, research on Gulf War illness, exposures to burn pits, and other service-related exposures to potentially toxic chemicals and materials will allow the research community to improve scientific understanding and pathobiology from exposure, more efficiently assess comorbidities, and speed the development of treatments, cures, and preventions. Therefore, the agreement recommends \$30,000,000

for a peer-reviewed toxic exposures research program. The funds provided in this program are directed to be used to conduct research of clear scientific merit and direct relevance to neurotoxin exposure; Gulf War illness and its treatment; airborne hazards and burn pits; as well as toxic military exposures in general, including prophylactic medications, pesticides, organophosphates, toxic industrial chemicals, materials, metals, and minerals. The agreement directs the Director of Congressionally Directed Medical Research Programs, to ensure that the program is conducted using competitive selection and peer-review for the identification of research with the highest technical merit and military benefit. Further, the agreement directs that this program be coordinated with similar activities in the Department of Veterans Affairs. Collaborations between researchers at military or veteran institutions and non-military research institutions are encouraged to leverage the knowledge, infrastructure, and access to military and veteran populations. The inclusion of the toxic exposures research program shall not prohibit research in any other congressionally directed research program that may be associated with conditions or health abnormalities which may have been the result of toxic exposures.

## CHEMICAL AGENTS AND MUNITIONS DESTRUCTION, DEFENSE

The agreement provides \$1,094,352,000 for Chemical Agents and Munitions Destruction, Defense, as follows:

### EXPLANATION OF PROJECT LEVEL ADJUSTMENTS [In thousands of dollars]

	Budget Request	Final Bill
OPERATION AND MAINTENANCE	93,121	93,121
RESEARCH, DEVELOPMENT, TEST AND EVALUATION	1,001,231	1,001,231
TOTAL, CHEMICAL AGENTS AND MUNITIONS DESTRUCTION, DEFENSE	1,094,352	1,094,352

## DRUG INTERDICTION AND COUNTER-DRUG ACTIVITIES, DEFENSE

The agreement provides \$925,649,000 for Drug Interdiction and Counter-Drug Activities, Defense, as follows:

### EXPLANATION OF PROJECT LEVEL ADJUSTMENTS [In thousands of dollars]

	Budget Request	Final bill
<b>COUNTER-NARCOTICS SUPPORT</b>	<b>593,250</b>	<b>579,750</b>
Project 1387 insufficient budget justification		-8,500
Reduce duplicative efforts		-5,000
<b>DRUG DEMAND REDUCTION PROGRAM</b>	<b>126,024</b>	<b>126,024</b>
<b>NATIONAL GUARD COUNTER-DRUG PROGRAM</b>	<b>96,970</b>	<b>194,211</b>
Program increase		97,241
<b>NATIONAL GUARD COUNTER-DRUG SCHOOLS</b>	<b>5,664</b>	<b>25,664</b>
Program increase		20,000
<b>TOTAL, DRUG INTERDICTION AND COUNTER-DRUG ACTIVITIES, DEFENSE</b>	<b>821,908</b>	<b>925,649</b>

### DRUG INTERDICTION AND COUNTER-DRUG ACTIVITIES, DEFENSE

The agreement provides \$194,211,000 for the National Guard Counter-Drug Program and an additional \$33,696,000 is included under Counter-Narcotics Support for operational support to the National Guard.

The Secretary of Defense is directed to ensure that international programs requested and supported by this account do not duplicate programs funded under the Defense Security Cooperation Agency (DSCA) in the Operation and Maintenance, Defense-Wide (OM,DW) account. Any notification of funds execution submitted pursuant to 10 U.S.C. 284 shall identify any resources within the DSCA OM,DW account that are allocated for similar or related purposes.

The Secretary of Defense is directed to provide quarterly reports to the House and Senate Appropriations Committees on the use and status of funds provided under this heading, including information for each project as identified in the PB-47 Project Definitions budget exhibit of the fiscal year 2022 budget justification materials and other documentation supporting the fiscal year 2022 budget request.

OFFICE OF THE INSPECTOR GENERAL

The agreement provides \$438,363,000 for the Office of the Inspector General, as follows:

EXPLANATION OF PROJECT LEVEL ADJUSTMENTS  
[In thousands of dollars]

	Budget Request	Final Bill
OPERATION AND MAINTENANCE	435,918	435,918
PROCUREMENT	80	80
RESEARCH, DEVELOPMENT, TEST AND EVALUATION	2,365	2,365
<b>TOTAL, OFFICE OF THE INSPECTOR GENERAL</b>	<b>438,363</b>	<b>438,363</b>

QUARTERLY END STRENGTH AND EXECUTION REPORTS

The agreement directs the Department of Defense Inspector General to provide quarterly reports to the congressional defense committees on civilian personnel end strength, full-time equivalents, and budget execution not later than 15 days after the end of each fiscal quarter. The reports should contain quarterly civilian personnel end strength and full-time equivalents (FTE) as well as an estimate of fiscal year end strength and fiscal year FTE. The reports should also include quarterly budget execution data

along with revised fiscal year estimated execution data. The Inspector General is directed to provide realistic end of fiscal year estimates based on personnel trends to date.

The agreement does not include the directive under this heading in House Report 117-88 regarding assessment of the program to monitor, evaluate, and oversee funds appropriated under the heading Afghanistan Security Forces Fund.

## TITLE VII - RELATED AGENCIES

The agreement provides \$1,101,100,000 in Title VII, Related Agencies, as follows:

~~(INSERT COMPUTER TABLE)~~

INSERT (156A)

(DOLLARS IN THOUSANDS)

	BUDGET REQUEST	FINAL BILL
-----		
TITLE VII		
RELATED AGENCIES		
Central Intelligence Agency Retirement and Disability System Fund.....	514,000	514,000
Intelligence Community Management Account (ICMA).....	634,000	587,100
	=====	=====
Total, title VII, Related agencies.....	1,148,000	1,101,100
	=====	=====

(156K)



## CLASSIFIED ANNEX

Adjustments to classified programs are addressed in a separate, detailed, and comprehensive classified annex. The Intelligence Community, the Department of Defense, and other organizations are expected to fully comply with the recommendations and directions in the classified annex accompanying the Department of Defense Appropriations Act, 2022.

### CENTRAL INTELLIGENCE AGENCY RETIREMENT AND DISABILITY SYSTEM FUND

The agreement provides \$514,000,000 for the Central Intelligence Agency Retirement and Disability Fund.

### INTELLIGENCE COMMUNITY MANAGEMENT ACCOUNT

The agreement provides \$587,100,000, a decrease of \$46,900,000 below the budget request, for the Intelligence Community Management Account.

## TITLE VIII – GENERAL PROVISIONS

The agreement incorporates general provisions which were not amended. Those general provisions that were addressed in the agreement are as follows:

The agreement includes a provision proposed by the House which provides for the general transfer authority of funds to other military functions.

The agreement modifies a provision which identifies tables as Explanation of Project Level Adjustments.

The agreement includes a provision proposed by the House which provides for the establishment of a baseline for application of reprogramming and transfer authorities for the current fiscal year.

The agreement modifies a provision regarding limitations and conditions on the use of funds made available in this Act to initiate multiyear procurement contracts. The House bill contained a similar provision.

The agreement modifies a provision proposed by the House regarding management of civilian personnel of the Department of Defense.

The agreement modifies a provision for the transfer of funds appropriated in title III of this Act for the Department of Defense Pilot Mentor-Protege Program.

The agreement retains a provision proposed regarding limitations on the use of funds to purchase anchor and mooring chains. The House included a similar provision.

The agreement includes a provision for incentive payments authorized by section 504 of the Indian Financing Act of 1974 (25 U.S.C. 1544).

The agreement includes a provision to provide for the availability of funds for the mitigation of environmental impacts on Indian lands resulting from Department of Defense activities.

The agreement does not include a provision that establishes a minimum wage for the contractor workforce.

The agreement does not include a provision related to covered reports.

The agreement retains a provision which restricts the use of funds to reduce or prepare to reduce the number of deployed and non-deployed strategic delivery vehicles and launchers. The House bill did not contain a similar provision.

The agreement modifies a provision to provide funding in the Army's Working Capital Fund to maintain competitive rates at the arsenals.

The agreement includes a provision which provides funding for the Civil Air Patrol Corporation.

The agreement modifies a provision that prohibits funding from being used to establish new Department of Defense Federally Funded Research and Development Centers with certain limitations.

The agreement includes a prohibition on funding being used for the procurement of ball and roller bearings other than those produced by a domestic source and of domestic origin.

The agreement modifies a provision providing appropriations for a National Defense Stockpile Transaction Fund for the acquisition and retention of certain critical materials.

The agreement retains a prohibition on the use of funds for the purchase or manufacture of a United States flag unless such flags are treated as covered items under section 2533a(b) of title 10, United States Code. The House bill contained a similar provision.

The agreement retains a provision that provides authority to use operation and maintenance appropriations to purchase items having an investment item unit cost of not more than \$250,000. The House bill contained a similar provision.

The agreement includes a provision proposed by the House to prohibit the use of funds in contravention of the First Amendment.

The agreement retains a provision that restricts any funding to be used for the retirement or divestiture of RQ-4 Global Hawk Block 40 aircraft and prohibits deactivation of the corresponding squadrons. The House bill contained no similar provision.

The agreement modifies a provision that provides authority to use operation and maintenance appropriations for the Asia Pacific Regional Initiative Program.

The agreement includes a provision proposed by the House that places certain limitations on the use of funds made available in this Act to establish field operating agencies.

The agreement retains a provision that places restrictions on converting to contractor performance an activity or function of the Department of Defense unless it meets certain guidelines provided. The House bill contained a similar provision.

(RESCISSIONS)

The agreement modifies a provision proposed by the House recommending rescissions and provides for the rescission of \$3,305,725,000. The rescissions agreed to are:

2020 Appropriations:

Missile Procurement, Army:

Stinger Mods .....5,000,000

Lethal Miniature Aerial Missile System .....1,953,000

Procurement of Weapons and Tracked Combat Vehicles, Army:

M240 Medium Machine Gun Mods .....4,500,000

Other Procurement, Army:

Bridge Supplemental Set.....13,000,000

Other Procurement, Navy:

Small and Medium UUV .....3,500,000

Aircraft Procurement, Air Force:

Combat Rescue Helicopter .....18,200,000

Target Drones.....	9,741,000
MQ-9 Reaper.....	1,000,000
B-1B.....	5,488,000
LAIRCM .....	30,000,000
F-15 .....	14,984,000
F-22A .....	21,842,000
Increment 3.2B.....	2,000,000
C-130J Mods.....	6,097,000
C-135.....	12,592,000
E-4.....	13,341,000
MQ-9 Mods.....	14,000,000
Initial Spares/Repair Parts.....	4,200,000
Missile Procurement, Air Force:	
Small Diameter Bomb.....	40,000,000
Other Procurement, Air Force:	
ATCALs .....	3,000,000
Base Communication Infrastructure .....	20,000,000
Combat Training Ranges .....	15,000,000
2021 Appropriations:	
Operation and Maintenance, Defense-Wide:	
DSCA Security Cooperation.....	75,000,000
Coalition Support Funds .....	26,000,000
Afghanistan Security Forces Fund:	
Afghanistan Security Forces Fund.....	700,000,000
Counter-ISIS Train and Equip Fund:	
Counter-ISIS Train and Equip Fund.....	250,000,000
Aircraft Procurement, Army:	
AH-64 Apache Block IIIA (AP).....	5,000,000
Procurement of Weapons and Tracked Combat Vehicles, Army:	
M240 Medium Machine Gun Mods .....	4,533,000
Procurement of Ammunition, Army:	
Cartridges, Tank, 105mm and 120mm, All Types .....	37,500,000
Shoulder Launched Munitions, All Types.....	23,788,000
CAD/PAD, All Types .....	3,466,000
Other Procurement, Army:	
Joint Information Environment.....	3,177,000
Aircraft Procurement, Navy:	
V-22 (Medium Lift) AP.....	15,210,000
CH-53K.....	36,572,000

Weapons Procurement, Navy:	
Standard Missile.....	16,148,000
Drones and Decoys .....	19,956,000
Small Arms and Weapons.....	931,000
Procurement of Ammunition, Navy and Marine Corps:	
Pyrotechnic and Demolition .....	1,744,000
Mortars .....	3,450,000
Shipbuilding and Conversion, Navy:	
DDG-51 AP.....	130,000,000
Other Procurement, Navy:	
LHA/LHD Midlife .....	3,445,000
LCS MM Mission Modules .....	10,246,000
LCS In-Service Modification.....	35,634,000
Procurement, Marine Corps:	
Radio Systems.....	80,109,000
Aircraft Procurement, Air Force:	
F-15EX.....	76,856,000
KC-46A MDAP .....	88,170,000
MC-130J.....	57,400,000
MH-139A .....	194,016,000
Combat Rescue Helicopter .....	17,600,000
MQ-9 Reaper .....	20,000,000
B-52.....	9,100,000
A-10 .....	39,000,000
F-16 .....	16,187,000
F-22A .....	15,810,000
F-35 Mods .....	5,079,000
T-6.....	2,700,000
C-130.....	1,980,000
MQ-9 Mods.....	10,700,000
Initial Spares/Repair Parts.....	131,177,000
F-16 Post-Production Support .....	5,000,000
Procurement, Space Force:	
GPS III Follow-On.....	18,000,000
National Security Space Launch.....	17,700,000
Procurement of Ammunition, Air Force:	
JDAM.....	339,289,000
B61 .....	12,400,000
Other Procurement, Air Force:	

Medium Tactical Vehicle.....	3,400,000
Combat Training Ranges .....	20,990,000
MEECN.....	15,000,000
Classified Adjustment.....	40,000,000
Research, Development, Test, and Evaluation, Army:	
Technology Maturation Initiatives.....	16,663,000
Infantry Support Weapons .....	14,200,000
Brilliant Anti-Armor Submunition .....	20,175,000
Weapons and Munitions – Eng Dev .....	3,913,000
Landmine Warfare/Barrier – Eng Dev .....	1,925,000
155mm Self-Propelled Howitzer Improvements .....	22,709,000
Research, Development, Test, and Evaluation, Navy:	
Next Generation Jammer, Increment II .....	51,500,000
Advanced Arresting Gear .....	4,000,000
JNT Standoff Weapon System.....	5,500,000
Cooperative Engagement Capability .....	7,022,000
Research, Development, Test, and Evaluation, Space Force:	
Next-Generation OPIR.....	100,000,000
Space Test and Training Range Development.....	2,000,000
Satellite Control Network .....	10,000,000
Ballistic Missile Defense Radars .....	8,500,000
Research, Development, Test, and Evaluation, Defense-Wide:	
Microelectronics Restructure, BA 4 .....	14,451,000
Microelectronics Restructure, BA 5 .....	8,216,000
DARPA .....	53,000,000
Classified Adjustment.....	33,050,000
No-Year Appropriations:	
Defense Working Capital Funds:	
Defense Counterintelligence and Security Agency	
Working Capital Fund.....	30,000,000

The agreement includes a provision proposed by the House to provide for reimbursement to the National Guard and reserve when members of the National Guard and reserve provide intelligence or counterintelligence support to the combatant commands, defense agencies, and joint intelligence activities.

The agreement includes a provision proposed by the House to provide funding for Red Cross and United Service Organizations grants.

The agreement includes a provision proposed by the House to provide funding for Sexual Assault Prevention and Response Programs.

The agreement retains language prohibiting the amendment or funding to separate, or to consolidate from within, the National Intelligence Program budget from the Department of Defense budget. The House bill contained a similar provision.

The agreement includes a provision proposed by the House which provides a grant to the Fisher House Foundation, Inc.

The agreement includes a new provision that provides funding to improve tactical artificial intelligence at the combatant commands.

The agreement retains a provision that provides for the funding of prior year shipbuilding cost increases. The House bill contained a similar provision.

The agreement includes a provision proposed by the House regarding contingency budget operations.

The agreement includes a new provision that provides funding available for transfer to various Department of Defense accounts for purposes of recruiting and training an artificial intelligence-literate acquisition workforce.

The agreement does not include a provision to prohibit the use of funds for the purpose of making remittances to the Department of Defense Acquisition Workforce Development Account, as the provision has been addressed in an authorization bill.

The agreement includes a provision proposed by the House prohibiting the use of funds to provide certain missile defense information to certain entities.

The agreement includes a provision proposed by the House on the use of funds in the Shipbuilding and Conversion, Navy account to purchase five used auxiliary vessels for the National Defense Reserve Fleet.



The agreement does not include a provision that revises economic assumptions.

The agreement does not include a provision related to the rapid prototyping fund.

The agreement does not include a provision that establishes a reporting requirement related to the National Instant Criminal Background Check System.

The agreement retains a provision that prohibits the use of funds to award a new TAO Fleet Oiler or FFG Frigate program contract for the acquisition of certain components unless those components are manufactured in the United States. The House bill contained a similar provision.

The agreement modifies a provision proposed by the House that prohibits funds for the development and design of certain future naval ships unless any contract specifies that all hull, mechanical, and electrical components are manufactured in the United States.

The agreement includes a provision proposed by the House regarding the prohibition on funds for the decommissioning of any Littoral Combat Ships.

The agreement includes a provision proposed by the House regarding a prohibition on the use of funds for gaming or entertainment that involves nude entertainers.

The agreement modifies a provision proposed by the House that makes funds available through the Office of Local Defense Community Cooperation for transfer to the Secretary of Education, to make grants to construct, renovate, repair, or expand elementary and secondary public schools on military installations.

The agreement includes a provision proposed by the House providing guidance on the implementation of the Policy for Assisted Reproductive Services for the Benefit of Seriously or Severely Ill/Injured Active Duty Service Members.

The agreement retains a provision on the use of funds to modify two F-35 Joint Strike Fighters per variant to a test configuration. The House bill contained a similar provision.

The agreement does not include a provision proposed by the House regarding death gratuity payments.

The agreement does not include a provision proposed by the House regarding advanced billing for background investigations.

The agreement includes a provision proposed by the House regarding the prohibition of funds from being used to transfer the National Reconnaissance Office to the Space Force.

The agreement modifies a provision proposed by the House that requires the Secretary of Defense to make a certification prior to the transfer of any element to the Space Force.

The agreement includes a provision proposed by the House to prohibit funds to establish a field operating agency of the Space Force.

The agreement includes a new provision that provides the authority to exceed Working Capital Fund monetary limitations.

The agreement does not include a provision proposed by the House regarding the control and management of the budget for Cyber Mission Forces.

The agreement does not include a provision regarding fuel costs.

The bill modifies a provision proposed by the House to provide funds for agile development, test and evaluation, procurement, production and modification, and the operation and maintenance for certain software pilot programs.

The agreement modifies a provision proposed by the House that provides funding for mitigation of military aircraft noise.

The agreement does not include a provision proposed by the House related to section 365 of H.R. 1280 of the 117<sup>th</sup> Congress.

The agreement includes a provision proposed by the House regarding the obligation of funds in anticipation of receipt of contributions from the Government of Kuwait.

The agreement includes a provision proposed by the House to require notification of the receipt of contributions from foreign governments.

The agreement retains a provision regarding the procurement of certain vehicles in the United States Central Command area. The House bill contained a similar provision.

The agreement does not include a provision proposed by the House that provides for the purchase of items of a particular investment unit cost from funding made available for operation and maintenance.

The agreement includes a provision proposed by the House regarding the prohibition on the use of funds with respect to Iraq in contravention of the War Powers Resolution.

The agreement includes a provision proposed by the House regarding a prohibition on the use of funds with respect to Syria in contravention of the War Powers Resolution.

The agreement includes a provision proposed by the House related to the use of force against Iran and North Korea.

The agreement modifies a prohibition proposed by the House on the establishment of permanent bases in Iraq or Afghanistan or United States control over Iraq or Syria oil resources.

The agreement does not include a provision proposed by the House regarding foreign bases.

The agreement does not include a provision proposed by the House regarding quarterly reports on the deployment of United States Armed Forces.

The agreement modifies a provision proposed by the House regarding a prohibition on the use of funding under certain headings to procure or transfer man-portable air defense systems.

The agreement does not include a provision proposed by the House regarding the transfer of aircraft to the Afghanistan Nation Security Forces.

The agreement does not include a provision proposed by the House regarding the Afghanistan Security Forces Fund.

The agreement does not include a provision proposed by the House regarding the training and equipment of the Afghanistan Security Forces Fund.

The agreement does not include a provision proposed by the House regarding the transport and safe passage of Afghans.

The agreement modifies a provision proposed by the House and provides funding for International Security Cooperation Programs.

The agreement modifies a provision proposed by the House that allows for funding appropriated to the Defense Security Cooperation Agency to be used to support coalition forces to counter the Islamic State of Iraq and Syria.

The agreement includes a provision proposed by the House to provide funding to reimburse certain countries for border security.

The agreement includes a provision proposed by the House to provide security assistance to the Government of Jordan.

The agreement modifies a provision to provide security assistance to Ukraine.

The agreement includes a provision proposed by the House which limits funding to Rosoboronexport.

The agreement retains a provision to provide funding to the government of Israel for the procurement of the Iron Dome defense system. The House bill contained no similar provision.

The agreement includes a provision proposed by the House that prohibits the use of funds to provide arms, training, or other assistance to the Azov Battalion.

The agreement does not include a provision proposed by the House that prohibits funds to support military operations against the Houthis in Yemen.

The agreement does not include a provision proposed by the House related to an integrated security cooperation strategy.

The agreement does not include a provision proposed by the House prohibiting the use of funds to operate the detention facility at United States Naval Station, Guantanamo Bay, Cuba.

The agreement does not include a provision proposed by the House related to the El Mozote massacre.

The agreement does not include a provision proposed by the House related to LED light bulbs.

The agreement includes a provision proposed by the House that prohibits the use of funds to support any activity conducted by or associated with the Wuhan Institute of Virology.

The agreement does not include a provision proposed by the House that repeals the 2001 Authorization for the Use of Military Force.

The agreement includes a new provision to prohibit the use of funds to transfer, release, or assist in the transfer or release to or within the United States certain detainees.

The agreement includes a new provision to prohibit the use of funds to transfer any individual detained at United States Naval Station Guantanamo Bay, Cuba, to the custody or control of the individual's country of origin or any other foreign country.

The agreement includes a new provision that prohibits the use of funds to construct, acquire, or modify any facility in the United States to house any individual detained at United States Naval Station Guantanamo Bay, Cuba.

The agreement includes a new provision which prohibits the use of funds to carry out the closure of the United States Naval Station Guantanamo Bay, Cuba.

The agreement includes a provision that amends section 165 of the Continuing Appropriations Act, 2022.

The agreement includes a provision that appropriates funding for the same purposes and under the same authorities and conditions as amounts made available in section 165(c) of the Continuing Appropriations Act, 2022.

The agreement includes a new provision amending the National Defense Authorization Act for Fiscal Year 2022 (Public Law 117-81) with regard to commissions.

DISCLOSURE OF EARMARKS AND CONGRESSIONALLY DIRECTED  
SPENDING ITEMS

Following is a list of congressional earmarks and congressionally directed spending items (as defined in clause 9 of rule XXI of the Rules of the House of Representatives and rule XLIV of the Standing Rules of the Senate, respectively) included in the bill or this explanatory statement, along with the name of each House Member, Senator, Delegate, or Resident Commissioner who submitted a request to the Committee of jurisdiction for each item so identified. For each item, a Member is required to provide a certification that neither the Member nor the Member's immediate family has a financial interest, and each Senator is required to provide a certification that neither the Senator nor the Senator's immediate family has a pecuniary interest in such congressionally directed spending item. Neither the bill nor the explanatory statement contains any limited tax benefits or limited tariff benefits as defined in the applicable House and Senate rules.

DEFENSE  
(Community Project Funding Items)

Agency	Account	Recipient	Project Name	Amount	Requester(s)	Origination
Air Force	RDTE,AF	Texas A&M University—Central Texas, Killeen, TX	Development of Cybersecurity Methodologies	\$2,990,000	Carter (TX)	H
Air Force	RDTE,AF	Central New York Defense Alliance, Rome, NY	Skydome: Trusted Smart-X Experimentation Environment	200,000	Tenney	H
Army	RDTE,A	Georgia Southern University, Statesboro, GA	Soldier Athlete Human Performance Optimization	1,500,000	Carter (GA)	H
Army	RDTE,A	Pennington Biomedical Research Center, Baton Rouge, LA	Center for Excellence in Military Health and Performance Enhancement	3,566,666	Graves (LA)	H
Army	RDTE,A	Coalition for National Trauma Research, San Antonio, TX	National Trauma Research Repository Data Population Project	1,900,000	Ruppersberger	H
Army	RDTE,A	APG Centennial Celebration Association, Belcamp, MD	The Discovery Center at Water's Edge	250,000	Ruppersberger	H
Defense-Wide	RDTE,DW	Kansas City Kansas Community College, Kansas City, KS	Automation Engineering Technology Program	1,981,000	Dauids (KS)	H
Defense-Wide	RDTE,DW	National Center for Defense Manufacturing and Machining, El Paso, TX	El Paso Makes Contract Support for El Paso Manufacturers	964,000	Escobar	H
Defense-Wide	RDTE,DW	VA Tech University, Blacksburg, VA	Next Generation Explosives and Propellants	1,000,000	Griffith	H
Defense-Wide	RDTE,DW	American Museum of Natural History, New York, NY	Novel Analytical and Empirical Approaches to the Prediction and Monitoring of Disease Transmission	1,500,000	Nadler	H
Defense-Wide	RDTE,DW	The University of North Carolina at Chapel Hill, Chapel Hill, NC	Assessing and Tracking Tactical Forces Initiative	4,000,000	Price (NC)	H
Defense-Wide	RDTE,DW	The University of Texas at San Antonio, San Antonio, TX	Cybersecurity Manufacturing Innovation Park	1,000,000	Castro (TX)	H

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DEFENSE—Continued  
 [Community Project Funding Items]

Agency	Account	Recipient	Project Name	Amount	Requestor(s)	Origination
Defense Wide	RDTE,DW	Institute for Digital Enterprise Advancement, Huntsville, AL	Systems Engineering Technician Education Initiative	550,000	Aderholt	H
Navy	RDTE,N	Monmouth University, West Long Branch, NJ	Coastal adaptation research for improved coastal community and NWS Earle military installation resilience	450,000	Pallone	H
Space Force	RDTE,SF	The Texas A&M Engineering Experiment Station, College Station, TX	Development of a Core Manipulator Joint	1,665,000	Sessions	H

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
<b>TITLE I</b>					
<b>MILITARY PERSONNEL</b>					
Military Personnel, Army	44,861,853	47,973,824	47,814,079	+2,952,226	-159,745
CR Funding Military Personnel, Army - P.L. 117-86	---	---	33,263	+33,263	+33,263
Military Personnel, Navy	33,764,579	35,496,879	35,504,251	+1,739,672	+7,372
CR Funding Military Personnel, Navy - P.L. 117-86	---	---	91,327	+91,327	+91,327
Military Personnel, Marine Corps	14,557,436	14,748,337	14,572,400	+14,964	-175,937
CR Funding Military Personnel, Marine Corps - P.L. 117-86	---	---	5,206	+5,206	+5,206
Military Personnel, Air Force	32,784,171	35,047,901	35,078,206	+2,294,035	+30,305
CR Funding Military Personnel, Air Force - P.L. 117-86	---	---	27,564	+27,564	+27,564
Reserve Personnel, Army	5,037,119	5,229,805	5,156,976	+119,857	-72,829
Reserve Personnel, Navy	2,200,600	2,316,934	2,297,029	+96,429	-19,905
Reserve Personnel, Marine Corps	843,564	881,909	802,619	-40,945	-79,290
Reserve Personnel, Air Force	2,193,493	2,386,013	2,371,001	+177,508	-15,012
National Guard Personnel, Army	8,663,999	9,051,344	9,017,728	+353,729	-33,616
National Guard Personnel, Air Force	4,530,091	4,814,974	4,764,443	+234,352	-50,531
<b>Total, title I, Military Personnel</b>	<b>149,436,905</b>	<b>157,947,920</b>	<b>157,536,092</b>	<b>+8,099,187</b>	<b>-411,828</b>
<b>Total, including Tricare</b>	<b>157,807,905</b>	<b>167,285,095</b>	<b>166,873,267</b>	<b>+9,065,362</b>	<b>-411,828</b>

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
TITLE II					
OPERATION AND MAINTENANCE					
Operation and Maintenance, Army	38,418,982	54,616,397	55,016,103	+16,597,121	+399,706
CR Funding Operation and Maintenance, Army - P.L. 117-86	---	---	22,640	+22,640	+22,640
Operation and Maintenance, Navy	47,632,527	60,441,228	62,480,035	+14,847,508	+2,038,807
CR Funding Operation and Maintenance, Navy - P.L. 117-86	---	---	70,000	+70,000	+70,000
Operation and Maintenance, Marine Corps	7,286,184	9,024,791	9,185,430	+1,899,246	+160,639
Operation and Maintenance, Air Force	33,528,409	53,876,475	55,103,948	+21,575,539	+1,227,473
Operation and Maintenance, Space Force	2,492,114	3,440,712	3,435,212	+943,098	-5,500
Operation and Maintenance, Defense-Wide	39,048,990	44,918,366	45,864,202	+6,815,212	+945,836
Afghanistan Security Forces Fund	---	3,327,810	---	---	-3,327,810
Counter-ISIS Train and Equip Fund (CTEF)	---	522,000	500,000	+500,000	-22,000
CR Funding Operation and Maintenance Defense Wide - P.L. 117-86	---	---	100,000	+100,000	+100,000
Operation and Maintenance, Army Reserve	2,887,898	3,000,635	3,032,255	+144,357	+31,620
Operation and Maintenance, Navy Reserve	1,115,150	1,148,698	1,173,598	+58,448	+24,900
Operation and Maintenance, Marine Corps Reserve	283,494	285,050	294,860	+11,366	+9,810
Operation and Maintenance, Air Force Reserve	3,268,461	3,352,106	3,417,706	+149,245	+65,600
Operation and Maintenance, Army National Guard	7,350,837	7,647,209	7,714,473	+363,636	+67,264
Operation and Maintenance, Air National Guard	6,785,853	6,574,020	6,786,420	+567	-212,400

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
United States Court of Appeals for the Armed Forces	15,211	15,589	15,589	+378	---
Environmental Restoration, Army	264,285	200,806	299,008	+34,723	+98,202
Environmental Restoration, Navy	421,250	298,250	390,113	-31,137	+91,863
Environmental Restoration, Air Force	509,250	301,768	522,010	+12,760	+220,242
Environmental Restoration, Defense-Wide	19,952	8,783	10,979	-8,973	+2,196
Environmental Restoration, Formerly Used Defense Sites	288,750	218,580	292,580	+3,830	+74,000
Overseas Humanitarian, Disaster, and Civic Aid	147,500	110,051	160,051	+12,551	+50,000
Cooperative Threat Reduction Account	360,190	239,849	344,849	-15,341	+105,000
Department of Defense Acquisition Workforce Development Account	88,181	54,679	56,679	-31,502	+2,000
<b>Total, title II, Operation and Maintenance</b>	<b>192,213,468</b>	<b>253,623,852</b>	<b>256,288,740</b>	<b>+64,075,272</b>	<b>+2,664,888</b>

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
TITLE III					
PROCUREMENT					
Aircraft Procurement, Army.....	3,457,342	2,806,452	3,295,431	-161,911	+488,979
Missile Procurement, Army.....	3,220,541	3,556,251	3,460,064	+239,523	-96,187
Procurement of Weapons and Tracked Combat Vehicles: Army.....	3,611,887	3,875,893	4,319,082	+707,195	+443,189
Procurement of Ammunition, Army.....	2,790,140	2,158,110	2,276,667	-513,473	+118,557
Other Procurement, Army.....	8,603,112	8,873,558	9,453,524	+850,412	+579,966
Aircraft Procurement, Navy.....	19,480,280	16,477,178	17,799,321	-1,680,959	+1,322,143
Weapons Procurement, Navy.....	4,477,773	4,220,705	3,982,657	-495,116	-238,048
Procurement of Ammunition, Navy and Marine Corps.....	792,023	988,018	845,289	+53,266	-142,729
Shipbuilding and Conversion, Navy.....	23,268,880	22,571,059	26,664,526	+3,395,646	+4,093,467
Other Procurement, Navy.....	10,512,209	10,875,912	11,072,651	+560,442	+196,739
Procurement, Marine Corps.....	2,648,375	3,043,091	3,093,770	+445,395	+50,679
Aircraft Procurement, Air Force.....	19,212,753	15,727,669	18,383,946	828,807	+2,656,277
Missile Procurement, Air Force.....	2,142,181	2,669,811	2,475,206	-333,025	-194,605
Procurement of Ammunition, Air Force.....	550,844	795,168	665,977	+115,133	-129,191
Other Procurement, Air Force.....	23,441,648	25,251,137	26,615,079	+3,173,431	+1,363,942
Procurement, Space Force.....	2,310,994	2,766,854	3,023,408	+712,414	+256,554
Procurement, Defense-Wide.....	5,837,347	5,548,212	6,177,561	+340,214	+629,349
Defense Production Act Purchases.....	174,639	340,927	388,327	+213,688	+47,400
National Guard and Reserve Equipment.....	---	---	950,000	+950,000	+950,000
	=====	=====	=====	=====	=====
Total, title III, Procurement.....	136,532,968	132,546,005	144,942,486	+8,409,518	+12,396,481
	=====	=====	=====	=====	=====

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
TITLE IV					
RESEARCH, DEVELOPMENT, TEST AND EVALUATION					
Research, Development, Test and Evaluation, Army.....	13,969,032	12,799,645	14,539,417	+570,365	+1,739,772
Research, Development, Test and Evaluation, Navy.....	20,078,829	22,639,362	22,139,080	+2,060,251	-500,282
Research, Development, Test and Evaluation, Air Force.....	36,357,443	39,184,328	41,592,913	+5,235,470	+2,408,585
Research, Development, Test and Evaluation, Space Force.....	10,540,069	11,266,387	11,597,405	+1,057,336	+331,018
Research, Development, Test and Evaluation, Defense-Wide.....	25,932,671	25,857,875	29,065,786	+3,133,115	+3,207,911
Operational Test and Evaluation, Defense.....	257,120	216,591	276,591	+19,471	+60,000
<b>Total, title IV, Research, Development, Test and Evaluation.....</b>	<b>107,135,164</b>	<b>111,964,188</b>	<b>119,211,192</b>	<b>+12,076,028</b>	<b>+7,247,004</b>

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
TITLE V					
REVOLVING AND MANAGEMENT FUNDS					
Defense Working Capital Funds.....	1,473,910	1,902,000	2,017,000	+543,090	+115,000
Total, title V, Revolving and Management Funds..	1,473,910	1,902,000	2,017,000	+543,090	+115,000

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request	Line Number
TITLE VI						9300
OTHER DEPARTMENT OF DEFENSE PROGRAMS						9400
Defense Health Program						9500
Operation and maintenance	30,747,659	34,182,719	33,957,986	+3,210,327	-224,733	9600
Procurement	544,369	779,008	758,708	+214,339	-20,300	9700
Research, development, test and evaluation	2,392,579	630,680	2,633,488	+240,909	+2,002,808	9710
Total, Defense Health Program	33,684,607	35,592,407	37,350,182	+3,665,575	+1,757,775	10100
Chemical Agents and Munitions Destruction, Defense						10200
Operation and maintenance	106,691	93,121	93,121	-13,570	---	10300
Procurement	616	---	---	-616	---	10400
Research, development, test and evaluation	942,493	1,001,231	1,001,231	+58,738	---	10500
Total, Chemical Agents	1,049,800	1,094,352	1,094,352	+44,552	---	10600
Drug Interdiction and Counter-Drug Activities, Defense	914,429	821,908	925,649	+11,220	+103,741	10705
Office of the Inspector General	375,439	438,363	438,363	+62,924	---	10900
Total, title VI, Other Department of Defense Programs	36,024,275	37,947,030	39,808,546	+3,784,271	+1,861,516	11100



DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
-----					
TITLE VII					
RELATED AGENCIES					
Central Intelligence Agency Retirement and Disability System Fund.....	514,000	514,000	514,000	---	---
Intelligence Community Management Account (ICMA)	633,719	634,000	587,100	-46,619	-46,900
=====					
Total, title VII, Related agencies.....	1,147,719	1,148,000	1,101,100	-46,619	-46,900
=====					

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request	Line Number
TITLE VIII						12300
GENERAL PROVISIONS						12310
Additional transfer authority (Sec. 8005)	(4,000,000)	(8,000,000)	(6,000,000)	(+2,000,000)	(-2,000,000)	12320
Indian Financing Act incentives (Sec. 8020)	25,000	---	25,000	---	+25,000	12321
FFRDC (Sec. 8027)	---	---	-63,840	-63,840	-63,840	12325
National Defense Stockpile Transaction Fund (Sec. 8035)	---	---	125,000	+125,000	+125,000	12363
Rescissions (Sec. 8048)	-3,248,047	---	-3,305,725	-57,678	-3,305,725	12370
National grants (Sec. 8053)	49,000	---	49,000	---	+49,000	12375
O&M, Defense-wide transfer authority (Sec. 8056)	(30,000)	(30,000)	(30,000)	---	---	12500
Fisher House Foundation (Sec. 8069)	10,000	---	5,000	-5,000	+5,000	12553
Improving Tactical Artificial Intelligence at the Combatant Commands (Sec. 8070)	---	---	200,000	+200,000	+200,000	12630
Fisher House O&M Army Navy Air Force transfer authority (Sec. 8071)	(11,000)	(11,000)	(11,000)	---	---	12640
John C. Stennis Center for Public Service Development (Sec. 8072)	(1,000)	---	(1,000)	---	(+1,000)	12654
Artificial Intelligence Workforce (Sec. 8080)	---	---	50,000	+50,000	+50,000	12660
Defense Health O&M transfer authority (Sec. 8093)	(137,000)	(137,000)	(137,000)	---	---	12664

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request	Line Number
Public Schools on Military Installations (Sec. 8109)	284,000	---	516,233	+232,233	+516,233	12668
Iron Dome (Sec. 8142)	---	---	1,000,000	+1,000,000	+1,000,000	12685
Foreign Currency Fluctuations	-375,000	---	---	+375,000	---	12883
Revised fuel costs	-1,700,362	---	---	+1,700,362	---	12885
Defense Industrial Base and Supply Chain Resiliency	100,000	---	---	-100,000	---	12891
Readiness	300,500	---	---	-300,500	---	12895
Red Hill (Sec. 8150)	---	---	100,000	+100,000	+100,000	12900
<hr/>						
Total, Title VIII, General Provisions	-4,554,909	---	-1,299,332	+3,255,577	-1,299,332	13200

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
TITLE IX					
OVERSEAS CONTINGENCY OPERATIONS/GLOBAL WAR ON TERRORISM (GWOT)					
Military Personnel					
Military Personnel, Army (GWOT)	2,748,033	---	---	-2,748,033	---
Military Personnel, Navy (GWOT)	382,286	---	---	-382,286	---
Military Personnel, Marine Corps (GWOT)	129,943	---	---	-129,943	---
Military Personnel, Air Force (GWOT)	1,077,168	---	---	-1,077,168	---
Reserve Personnel, Army (GWOT)	33,414	---	---	-33,414	---
Reserve Personnel, Navy (GWOT)	11,771	---	---	-11,771	---
Reserve Personnel, Marine Corps (GWOT)	2,048	---	---	-2,048	---
Reserve Personnel, Air Force (GWOT)	16,816	---	---	-16,816	---
National Guard Personnel, Army (GWOT)	195,314	---	---	-195,314	---
National Guard Personnel, Air Force (GWOT)	5,800	---	---	-5,800	---
Total, Military Personnel	4,602,593	---	---	-4,602,593	---
Operation and Maintenance					
Operation & Maintenance, Army (GWOT)	17,497,254	---	---	-17,497,254	---
Operation & Maintenance, Navy (GWOT)	11,568,363	---	---	-11,568,363	---
Operation & Maintenance, Marine Corps (GWOT)	1,108,667	---	---	-1,108,667	---
Operation & Maintenance, Air Force (GWOT)	18,432,020	---	---	-18,432,020	---
Operation & Maintenance, Space Force (GWOT)	77,115	---	---	-77,115	---

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Operation & Maintenance, Defense-Wide (GWOT)	6,041,898	---	---	-6,041,898	---
Operation & Maintenance, Army Reserve (GWOT)	33,399	---	---	-33,399	---
Operation & Maintenance, Navy Reserve (GWOT)	21,492	---	---	-21,492	---
Operation & Maintenance, Marine Corps Reserve (GWOT)	8,707	---	---	-8,707	---
Operation & Maintenance, Air Force Reserve (GWOT)	30,090	---	---	-30,090	---
Operation & Maintenance, Army National Guard (GWOT)	79,792	---	---	-79,792	---
Operation & Maintenance, Air National Guard (GWOT)	175,642	---	---	-175,642	---
Subtotal	55,074,439	---	---	-55,074,439	---
Afghanistan Security Forces Fund (GWOT)	3,047,612	---	---	-3,047,612	---
Counter-ISIS Train and Equip Fund (GWOT)	710,000	---	---	-710,000	---
Total, Operation and Maintenance	58,832,051	---	---	-58,832,051	---
Procurement					
Aircraft Procurement, Army (GWOT)	595,112	---	---	-595,112	---
Missile Procurement, Army (GWOT)	796,599	---	---	-796,599	---
Procurement of Weapons and Tracked Combat Vehicles, Army (GWOT)	15,225	---	---	-15,225	---
Procurement of Ammunition, Army (GWOT)	103,875	---	---	-103,875	---
Other Procurement, Army (GWOT)	924,823	---	---	-924,823	---
Aircraft Procurement, Navy (GWOT)	32,905	---	---	-32,905	---
Weapons Procurement, Navy (GWOT)	5,572	---	---	-5,572	---
Procurement of Ammunition, Navy and Marine Corps (GWOT)	77,424	---	---	-77,424	---
Other Procurement, Navy (GWOT)	341,612	---	---	-341,612	---

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Procurement, Marine Corps (GWOT)	47,963	---	---	-47,963	---
Aircraft Procurement, Air Force (GWOT)	772,738	---	---	-772,738	---
Missile Procurement, Air Force (GWOT)	223,772	---	---	-223,772	---
Procurement of Ammunition, Air Force (GWOT)	785,617	---	---	-785,617	---
Other Procurement, Air Force (GWOT)	355,339	---	---	-355,339	---
Procurement, Defense-Wide (GWOT)	342,137	---	---	-342,137	---
National Guard and Reserve Equipment (GWOT)	950,000	---	---	-950,000	---
<b>Total, Procurement</b>	<b>6,370,713</b>	<b>---</b>	<b>---</b>	<b>-6,370,713</b>	<b>---</b>
<b>Research, Development, Test and Evaluation</b>					
Research, Development, Test and Evaluation, Army (GWOT)	175,824	---	---	-175,824	---
Research, Development, Test and Evaluation, Navy (GWOT)	59,562	---	---	-59,562	---
Research, Development, Test and Evaluation, Air Force (GWOT)	5,304	---	---	-5,304	---
Research, Development, Test and Evaluation, Defense-Wide (GWOT)	80,818	---	---	-80,818	---
<b>Total, Research, Development, Test and Evaluation</b>	<b>321,508</b>	<b>---</b>	<b>---</b>	<b>-321,508</b>	<b>---</b>

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
-----					
Revolving and Management Funds					
Defense Working Capital Funds (GWOT) .....	20,090	---	---	-20,090	---
Other Department of Defense Programs					
Defense Health Program:					
Operation & Maintenance (GWOT) .....	365,098	---	---	-365,098	---
Office of the Inspector General (GWOT) .....	24,069	---	---	-24,069	---
Total, Other Department of Defense Programs .....	389,167	---	---	-389,167	---
-----					
GENERAL PROVISIONS -- THIS TITLE					
Additional transfer authority (GWOT) (Sec 9002) .....	(2,000,000)	---	---	(-2,000,000)	---
Rescissions (GWOT) (Sec.9023) .....	-1,886,122	---	---	+1,886,122	---
Total, General Provisions .....	-1,886,122	---	---	+1,886,122	---
=====					
Total, title IX (OCO/GWOT) .....	68,650,000	---	---	-68,650,000	---
=====					

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
OTHER APPROPRIATIONS					
EMERGENCY SECURITY SUPPLEMENTAL APPROPRIATIONS ACT, 2021 (PL-117-31)					
Military Personnel					
National Guard Personnel, Army (emergency)	231,000	---	---	-231,000	---
National Guard Personnel, Air Force (emergency)	28,900	---	---	-28,900	---
Total, Military Personnel	259,900	---	---	-259,900	---
Operation and Maintenance					
Operation and Maintenance, Army National Guard (emergency)	218,500	---	---	-218,500	---
Operation and Maintenance, Air National Guard (emergency)	42,500	---	---	-42,500	---
Overseas Humanitarian, Disaster, and Civic Aid (emergency)	500,000	---	---	-500,000	---
Total, Operation and Maintenance	761,000	---	---	-761,000	---
Total, EMERGENCY SECURITY SUPPLEMENTAL APPROPRIATIONS ACT, 2021 (PL-117-31)	1,020,900	---	---	-1,020,900	---

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
-----					
EXTENDING GOVERNMENT FUNDING AND DELIVERING EMERGENCY ASSISTANCT ACT, 2021 (PL 117-43)					
DIVISION 8 - DISASTER RELIEF SUPPLEMENTAL APPROPRIATIONS ACT, 2022					
Operation and Maintenance					
Operation and Maintenance, Navy (emergency).....	---	---	565,000	+565,000	+565,000
Operation and Maintenance, Air Force (emergency).....	---	---	330,000	+330,000	+330,000
	=====	=====	=====	=====	=====
Total, Division 8, .....	---	---	895,000	+895,000	+895,000
	=====	=====	=====	=====	=====

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
-----					
DIVISION C - AFGHANISTAN SUPPLEMENTAL APPROPRIATIONS ACT, 2022					
Operation and Maintenance					
Overseas Humanitarian, Disaster, and Civic Aid (emergency)	---	---	2,200,000	+2,200,000	+2,200,000
=====					
Total, Division C	---	---	2,200,000	+2,200,000	+2,200,000
=====					
Total, Extending Government Funding and Delivering Emergency Assistance Act, 2021	---	---	3,095,000	+3,095,000	+3,095,000

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
-----					
FURTHER EXTENDING GOVERNMENT FUNDING ACT (P.L. 117-70)					
DIVISION B - ADDITIONAL AFGHANISTAN SUPPLEMENTAL APPROPRIATIONS ACT, 2022					
Military Personnel					
Military Personnel, Army (emergency)	---	---	128,000	+128,000	+128,000
Military Personnel, Navy (emergency)	---	---	7,000	+7,000	+7,000
Military Personnel, Marine Corps (emergency)	---	---	32,000	+32,000	+32,000
Military Personnel, Air Force (emergency)	---	---	145,000	+145,000	+145,000
Total, Military Personnel	---	---	312,000	+312,000	+312,000
-----					
Operation and Maintenance					
Overseas Humanitarian, Disaster, and Civic Aid (emergency)	---	---	4,000,000	+4,000,000	+4,000,000
Total, FURTHER EXTENDING GOVERNMENT FUNDING ACT (P.L. 117-70)	---	---	4,312,000	+4,312,000	+4,312,000
-----					
Total, Other Appropriations	1,020,900	---	7,407,000	+6,386,100	+7,407,000

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
Grand total.....	697,451,400	706,416,170	736,349,999	+38,898,599	+29,933,829
Appropriations.....	(631,028,547)	(706,416,170)	(732,248,724)	(+101,220,177)	(+25,832,554)
Emergency appropriations.....	(1,020,900)	---	(7,407,000)	(+6,386,100)	(+7,407,000)
Global War on Terrorism (GWOT).....	(70,536,122)	---	---	(-70,536,122)	---
Rescissions.....	(-3,248,047)	---	(-3,305,725)	(-57,678)	(-3,305,725)
Rescissions (GWOT).....	(-1,886,122)	---	---	(+1,886,122)	---
(Transfer Authority).....	(4,179,000)	(8,178,000)	(6,179,000)	(+2,000,000)	(-1,999,000)
(Transfer Authority) (GWOT).....	(2,000,000)	---	---	(-2,000,000)	---

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DEPARTMENT OF DEFENSE APPROPRIATIONS ACT, 2022

(Amounts in thousands)

	FY 2021 Enacted	FY 2022 Request	Final Bill	Final Bill vs Enacted	Final Bill vs Request
RECAPITULATION					
Title I - Military Personnel	157,807,905	167,285,095	166,873,267	+9,065,362	-411,828
Title II - Operation and Maintenance	192,213,468	253,623,852	256,288,740	+64,075,272	+2,664,888
Title III - Procurement	136,532,968	132,546,005	144,942,486	+8,409,518	+12,396,481
Title IV - Research, Development, Test and Evaluation	107,135,164	111,964,188	119,211,192	+12,076,028	+7,247,004
Title V - Revolving and Management Funds	1,473,910	1,902,000	2,017,000	+543,090	+115,000
Title VI - Other Department of Defense Programs	36,024,275	37,947,030	39,808,546	+3,784,271	+1,861,516
Title VII - Related Agencies	1,147,719	1,148,000	1,101,100	-46,619	-46,900
Title VIII - General Provisions	-4,554,909	---	-1,299,332	+3,255,577	-1,299,332
Title IX - Global War on Terrorism (GWOT)	68,650,000	---	---	-68,650,000	---
Total, Department of Defense	697,451,400	706,416,170	736,349,999	+38,898,599	+29,933,829
Total, mandatory and discretionary	697,496,400	706,461,170	736,394,999	+38,898,599	+29,933,829

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