Department of Defense by the Director of Defense Biometrics in the Office of the Under Secretary for Acquisition, Technology, and Logistics.

Section 143—Counter-Improvised Explosive Device Initiatives Database

This section would direct the Secretary of Defense to direct the military services and the Director of the Joint Improvised Explosive Device Defeat Organization to create a comprehensive improvised explosive device defeat initiative database and work with the Joint Improvised Explosive Device Defeat Organization to develop a Department of Defense-wide database for all counter-improvised explosive device initiatives. This database would include all "defeat the device," "attack the network," and counter-improvised explosive device type efforts from across the Department, including the Rapid Equipping Force, joint concept technology demonstrations, and quick reaction task force efforts.

Section 144—Study on Lightweight Body Armor Solutions

This section would authorize the Secretary of Defense to direct a federally funded research and development center (FFRDC) to identify and examine the requirements for lighter weight body armor systems. This section would require that not later than six months after the date of enactment of this Act, the FFRDC shall submit to the Secretary of Defense a report recommending ways in which the Secretary of Defense and each secretary of the military departments may more effectively address the research, development, and procurement requirements regarding reducing the weight of body armor.

TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

OVERVIEW

The budget request contained $76.1 billion for research, development, test, and evaluation (RDT&E).

The committee recommends $76.5 billion, an increase of $342.6 million to the budget request.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Appropriation	FY 2011 Request	House Change	House Authorized
Research, Development, Test & Evaluation, Army	10,333,392	-16,638	10,316,754
Research, Development, Test & Evaluation, Navy	17,693,496	285,150	17,978,646
Research, Development, Test & Evaluation, Air Force	27,247,302	22,600	27,269,902
Research, Development, Test & Evaluation, Defense-Wide	20,661,600	51,496	20,713,096
Operational Test & Evaluation, Defense	194,910		194,910
TOTAL, RESEARCH, DEVELOPMENT, TEST AND EVALUATION	**76,130,700**	**342,608**	**76,473,308**

ARMY RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $10.3 billion for Army research, development, test, and evaluation (RDT&E). The committee recommends $10.3 billion, a decrease of $16.6 million to the budget request.

The committee recommendations for the fiscal year 2011 research, development, test, and evaluation, Army are identified in the table below. Major changes to the Army request are discussed following the table.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY					
BASIC RESEARCH					
001	0601101A	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	21,780		21,780
002	0601102A	DEFENSE RESEARCH SCIENCES	195,845	5,000	200,845
		Global Military Operating Environments		[2,000]	
		Social Science Research Capacity		[3,000]	
003	0601103A	UNIVERSITY RESEARCH INITIATIVES	91,161	5,000	96,161
		Minerva		[5,000]	
004	0601104A	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	98,087		98,087
		SUBTOTAL, BASIC RESEARCH	**406,873**	**10,000**	**416,873**
APPLIED RESEARCH					
005	0602105A	MATERIALS TECHNOLOGY	29,882	4,000	33,882
		Nanomanufacturing of Integrated Smart Materials Systems		[4,000]	
006	0602120A	SENSORS AND ELECTRONIC SURVIVABILITY	48,929		48,929
007	0602122A	TRACTOR HIP	14,624		14,624
008	0602211A	AVIATION TECHNOLOGY	43,476		43,476
009	0602270A	ELECTRONIC WARFARE TECHNOLOGY	17,330		17,330
010	0602303A	MISSILE TECHNOLOGY	49,525		49,525
011	0602307A	ADVANCED WEAPONS TECHNOLOGY	18,190		18,190
012	0602308A	ADVANCED CONCEPTS AND SIMULATION	20,582		20,582
013	0602601A	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	64,740	2,500	67,240
		Enhanced Visual Fidelity Simulation		[2,500]	
014	0602618A	BALLISTICS TECHNOLOGY	60,342		60,342
015	0602622A	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	5,324		5,324

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
016	0602623A	JOINT SERVICE SMALL ARMS PROGRAM	7,893		7,893
017	0602624A	WEAPONS AND MUNITIONS TECHNOLOGY	42,645	7,000	49,645
		Self-Inerting Munitions Technology Development		[3,000]	
		Unmanned Hybrid Projectile Project		[4,000]	
018	0602705A	ELECTRONICS AND ELECTRONIC DEVICES	60,859		60,859
019	0602709A	NIGHT VISION TECHNOLOGY	40,228		40,228
020	0602712A	COUNTERMINE SYSTEMS	19,118		19,118
021	0602716A	HUMAN FACTORS ENGINEERING TECHNOLOGY	21,042		21,042
022	0602720A	ENVIRONMENTAL QUALITY TECHNOLOGY	18,364		18,364
023	0602782A	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY	25,573		25,573
024	0602783A	COMPUTER AND SOFTWARE TECHNOLOGY	6,768		6,768
025	0602784A	MILITARY ENGINEERING TECHNOLOGY	79,189	6,000	85,189
		Cellulose Nanocomposites for Army Infrastructure and Troop Protection		[5,000]	
		Geosciences/Atmospheric Research		[1,000]	
026	0602785A	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY	22,198		22,198
027	0602786A	WARFIGHTER TECHNOLOGY	27,746		27,746
028	0602787A	MEDICAL TECHNOLOGY	96,797	19,507	116,304
		Bone-Integrated Prosthetics for Combat-Injured Soldiers		[2,000]	
		Epigenetic Disease Research		[2,500]	
		Improving Soldier Recovery from Catastrophic Bone Injuries		[6,500]	
		Maine Natural Biopolymer Research and Development Partnership		[1,320]	
		Scleral Healing and Bone Repair with Sphere-Templated Polymers		[1,687]	
		Tracking the Health of Soldiers with Advanced Implantable Nano-Sensors		[2,500]	
		Traumatic Brain Injury Research Initiative		[3,000]	

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		SUBTOTAL, APPLIED RESEARCH	**841,364**	**39,007**	**880,371**
ADVANCED TECHNOLOGY DEVELOPMENT					
029	0603001A	WARFIGHTER ADVANCED TECHNOLOGY	37,364	8,077	45,441
		Heat Illness Research at West Chester University's HEAT Institute to Ensure the Safety of Warfighters		[375]	
		Manufacturing Research and Development of Parachutes		[5,702]	
		Precision Airdrop Accuracy Enhancement		[2,000]	
030	0603002A	MEDICAL ADVANCED TECHNOLOGY	71,510	28,130	99,640
		Advanced Medical Training and Technology Platform		[3,000]	
		ALS Therapy Development Institute Gulf War Research Program		[4,830]	
		Bethesda Hospitals' Emergency Preparedness Partnership Collaboration Toolbox		[2,500]	
		Exoskeleton Development for Wounded Service Members		[3,000]	
		Hadron Particle Therapy		[5,000]	
		Next Generation Leishmaniasis Drug Development		[2,300]	
		Ophthalmic Robotic Surgery		[5,000]	
		Personal Status Monitor		[1,000]	
		Software-Based Treatment for Post Traumatic Stress Disorder		[1,500]	
031	0603003A	AVIATION ADVANCED TECHNOLOGY	57,454		57,454
032	0603004A	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	64,438		64,438
033	0603005A	COMBAT VEHICLE AND AUTOMOTIVE ADVANCED TECHNOLOGY	89,499	9,730	99,229
		Advanced Battery Manufacturing Research and Development		[5,000]	
		Smart Plug-In Hybrid Electric Vehicle Program		[4,730]	
034	0603006A	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	8,102		8,102

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
035	0603007A	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	7,921		7,921
036	0603008A	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	50,359	7,000	57,359
		Applied Communications and Information Networking		[7,000]	
037	0603009A	TRACTOR HIKE	8,015		8,015
038	0603015A	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	15,334		15,334
039	0603020A	TRACTOR ROSE	12,309		12,309
040	0603103A	EXPLOSIVES DEMILITARIZATION TECHNOLOGY	0		0
041	0603105A	MILITARY HIV RESEARCH	6,688		6,688
042	0603125A	COMBATING TERRORISM, TECHNOLOGY DEVELOPMENT	10,550		10,550
043	0603270A	ELECTRONIC WARFARE TECHNOLOGY	18,350	3,000	21,350
		Advanced Ground Electronic Warfare System (AGES)		[3,000]	
044	0603313A	MISSILE AND ROCKET ADVANCED TECHNOLOGY	84,553		84,553
045	0603322A	TRACTOR CAGE	9,986		9,986
046	0603606A	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	26,953		26,953
047	0603607A	JOINT SERVICE SMALL ARMS PROGRAM	9,151		9,151
048	0603710A	NIGHT VISION ADVANCED TECHNOLOGY	39,912		39,912
049	0603728A	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	15,878		15,878
050	0603734A	MILITARY ENGINEERING ADVANCED TECHNOLOGY	27,393	-7,500	19,893
		Fort Bliss Renewable and Alternative Energy Initiative		[2,500]	
		Program Reduction		[-10,000]	
051	0603772A	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY	24,873		24,873
		SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**696,592**	**48,437**	**745,029**
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
052	0603024A	UNIQUE ITEM IDENTIFICATION (UID)	0		0
053	0603305A	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION(NON SPACE)	11,455		11,455

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
054	0603308A	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION (SPACE)	27,551		27,551
055	0603327A	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING	0		0
056	0603619A	LANDMINE WARFARE AND BARRIER - ADV DEV	15,596		15,596
057	0603627A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	2,425		2,425
058	0603639A	TANK AND MEDIUM CALIBER AMMUNITION	42,183		42,183
059	0603653A	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	136,302		136,302
060	0603747A	SOLDIER SUPPORT AND SURVIVABILITY	18,556		18,556
061	0603766A	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV	17,962	-5,000	12,962
		Program Reduction		[-5,000]	
062	0603774A	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	0		0
063	0603779A	ENVIRONMENTAL QUALITY TECHNOLOGY	4,695		4,695
064	0603782A	WARFIGHTER INFORMATION NETWORK-TACTICAL	190,903		190,903
065	0603790A	NATO RESEARCH AND DEVELOPMENT	5,060		5,060
066	0603801A	AVIATION - ADV DEV	8,355		8,355
067	0603804A	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	80,490		80,490
068	0603805A	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION AND ANALYSIS	14,290		14,290
069	0603807A	MEDICAL SYSTEMS - ADV DEV	28,132		28,132
070	0603827A	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT	48,323		48,323
071	0603850A	INTEGRATED BROADCAST SERVICE	970		970
072	0305205A	ENDURANCE UAVS	93,000		93,000
		SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**746,248**	**-5,000**	**741,248**
SYSTEM DEVELOPMENT & DEMONSTRATION					
073	0604201A	AIRCRAFT AVIONICS	89,210		89,210
074	0604220A	ARMED, DEPLOYABLE HELOS	72,550		72,550
075	0604270A	ELECTRONIC WARFARE DEVELOPMENT	172,269		172,269
076	0604280A	JOINT TACTICAL RADIO	784		784

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
077	0604321A	ALL SOURCE ANALYSIS SYSTEM	22,574		22,574
078	0604328A	TRACTOR CAGE	23,194		23,194
079	0604601A	INFANTRY SUPPORT WEAPONS	80,337	3,000	83,337
		Helicopter Portable Oxygen Delivery System Generation III		[3,000]	
080	0604604A	MEDIUM TACTICAL VEHICLES	3,710		3,710
081	0604609A	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-SDD	5,335		5,335
082	0604611A	JAVELIN	9,999		9,999
083	0604622A	FAMILY OF HEAVY TACTICAL VEHICLES	3,519		3,519
084	0604633A	AIR TRAFFIC CONTROL	9,892		9,892
085	0604642A	LIGHT TACTICAL WHEELED VEHICLES	1,990		1,990
086	0604646A	NON-LINE OF SIGHT LAUNCH SYSTEM	81,247	-81,247	0
		Program Terminated		[-81,247]	
087	0604647A	NON-LINE OF SIGHT CANNON	0		0
088	0604660A	FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE	0		0
089	0604661A	FCS SYSTEMS OF SYSTEMS ENGR & PROGRAM MGMT	568,711	-71,300	497,411
		Program Reduction		[-71,300]	
090	0604662A	FCS RECONNAISSANCE (UAV) PLATFORMS	50,304		50,304
091	0604663A	FCS UNMANNED GROUND VEHICLES	249,948		249,948
092	0604664A	FCS UNATTENDED GROUND SENSORS	7,515		7,515
093	0604665A	FCS SUSTAINMENT & TRAINING R&D	610,389		610,389
094	0604666A	SPIN OUT TECHNOLOGY/CAPABILITY INSERTION	0		0
095	0604710A	NIGHT VISION SYSTEMS - SDD	52,549		52,549
096	0604713A	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,118		2,118
097	0604715A	NON-SYSTEM TRAINING DEVICES - SDD	27,756		27,756
098	0604741A	AIR DEFENSE COMMAND, CONTROL AND INTELLIGENCE - SDD	34,209		34,209
099	0604742A	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	30,291		30,291

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
100	0604746A	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	14,041		14,041
101	0604760A	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS) - SDD	15,547		15,547
102	0604778A	POSITIONING SYSTEMS DEVELOPMENT (SPACE)	0		0
103	0604780A	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	27,670		27,670
104	0604783A	JOINT NETWORK MANAGEMENT SYSTEM	0		0
105	0604802A	WEAPONS AND MUNITIONS - SDD	24,345		24,345
106	0604804A	LOGISTICS AND ENGINEER EQUIPMENT - SDD	41,039		41,039
107	0604805A	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS - SDD	90,736		90,736
108	0604807A	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT - SDD	34,474		34,474
109	0604808A	LANDMINE WARFARE/BARRIER - SDD	95,577		95,577
110	0604814A	ARTILLERY MUNITIONS	26,371		26,371
111	0604817A	COMBAT IDENTIFICATION	29,884		29,884
112	0604818A	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	60,970		60,970
113	0604822A	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	13,576		13,576
114	0604823A	FIREFINDER	24,736		24,736
115	0604827A	SOLDIER SYSTEMS - WARRIOR DEM/VAL	20,886		20,886
116	0604854A	ARTILLERY SYSTEMS	53,624	52,000	105,624
		Paladin Integrated Management- Program Increase		[52,000]	
117	0604869A	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	467,139		467,139
118	0604870A	NUCLEAR ARMS CONTROL MONITORING SENSOR NETWORK	7,276		7,276
119	0605013A	INFORMATION TECHNOLOGY DEVELOPMENT	23,957		23,957
120	0605018A	ARMY INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (A-IMHRS)	100,500		100,500
121	0605450A	JOINT AIR-TO-GROUND MISSILE (JAGM)	130,340		130,340
122	0605455A	SLAMRAAM	23,700		23,700
123	0605456A	PAC-3/MSE MISSILE	62,500		62,500
124	0605457A	ARMY INTEGRATED AIR AND MISSILE DEFENSE (AIAMD)	251,124		251,124

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
125	0605625A	MANNED GROUND VEHICLE	934,366		934,366
126	0605626A	E-MARSS	211,500		211,500
127	0303032A	TROJAN - RH12	3,697		3,697
128	0304270A	ELECTRONIC WARFARE DEVELOPMENT	21,571		21,571
		SUBTOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**5,021,546**	**-97,547**	**4,923,999**
RDT&E MANAGEMENT SUPPORT					
129	0604256A	THREAT SIMULATOR DEVELOPMENT	26,158		26,158
130	0604258A	TARGET SYSTEMS DEVELOPMENT	8,614		8,614
131	0604759A	MAJOR T&E INVESTMENT	42,102		42,102
132	0605103A	RAND ARROYO CENTER	20,492		20,492
133	0605301A	ARMY KWAJALEIN ATOLL	163,788		163,788
134	0605326A	CONCEPTS EXPERIMENTATION PROGRAM	17,704		17,704
135	0605502A	SMALL BUSINESS INNOVATIVE RESEARCH	0		0
136	0605601A	ARMY TEST RANGES AND FACILITIES	393,937	22,900	416,837
		Range Infrastructure- Unfunded Requirement		[22,900]	
137	0605602A	ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	59,040	17,700	76,740
		Instrumentation- Unfunded Requirement		[17,700]	
138	0605604A	SURVIVABILITY/LETHALITY ANALYSIS	41,812		41,812
139	0605605A	DOD HIGH ENERGY LASER TEST FACILITY	4,710		4,710
140	0605606A	AIRCRAFT CERTIFICATION	5,055		5,055
141	0605702A	METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	7,185		7,185
142	0605706A	MATERIEL SYSTEMS ANALYSIS	18,078		18,078
143	0605709A	EXPLOITATION OF FOREIGN ITEMS	5,460		5,460
144	0605712A	SUPPORT OF OPERATIONAL TESTING	68,191		68,191
145	0605716A	ARMY EVALUATION CENTER	61,450		61,450
146	0605718A	ARMY MODELING & SIM X-CMD COLLABORATION & INTEG	3,926		3,926

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
147	0605801A	PROGRAMWIDE ACTIVITIES	73,685		73,685
148	0605803A	TECHNICAL INFORMATION ACTIVITIES	48,309	1,000	49,309
		Army Educational Outreach Program		[1,000]	
149	0605805A	MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	53,338		53,338
150	0605857A	ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	3,195		3,195
151	0605898A	MANAGEMENT HQ - R&D	16,154		16,154
152	0909999A	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	0		0
		SUBTOTAL, RDT&E MANAGEMENT SUPPORT	**1,142,383**	**41,600**	**1,183,983**
OPERATIONAL SYSTEMS DEVELOPMENT					
153	0603778A	MLRS PRODUCT IMPROVEMENT PROGRAM	51,619		51,619
154	0102419A	AEROSTAT JOINT PROJECT OFFICE/JLENS	372,493		372,493
155	0203347A	INTELLIGENCE SUPPORT TO CYBER (ISC) MIP	2,360	-2,360	0
		Program Reduction		[-2,360]	
156	0203726A	ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	24,622		24,622
157	0203735A	COMBAT VEHICLE IMPROVEMENT PROGRAMS	204,481		204,481
158	0203740A	MANEUVER CONTROL SYSTEM	25,540		25,540
159	0203744A	AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	134,999		134,999
160	0203752A	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	710		710
161	0203758A	DIGITIZATION	6,329		6,329
162	0203759A	FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)	3,935		3,935
163	0203801A	MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	24,280		24,280
164	0203802A	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS	0		0
165	0203808A	TRACTOR CARD	14,870		14,870
166	0208010A	JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC)	0		0
167	0208053A	JOINT TACTICAL GROUND SYSTEM	12,403		12,403
168	0208058A	JOINT HIGH SPEED VESSEL (JHSV)	3,153		3,153

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
170	0303028A	SECURITY AND INTELLIGENCE ACTIVITIES	0		0
171	0303140A	INFORMATION SYSTEMS SECURITY PROGRAM	54,784	-36,661	18,123
		Transfer to OPA 051- Biometrics Equipment		[-36,661]	
172	0303141A	GLOBAL COMBAT SUPPORT SYSTEM	125,569		125,569
173	0303142A	SATCOM GROUND ENVIRONMENT (SPACE)	33,694		33,694
174	0303150A	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	13,024		13,024
175	0303158A	JOINT COMMAND AND CONTROL PROGRAM (JC2)	0		0
177	0305204A	TACTICAL UNMANNED AERIAL VEHICLES	54,300		54,300
178	0305208A	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	103,002		103,002
179	0305219A	MQ-1 SKY WARRIOR A UAV	123,156		123,156
180	0305232A	RQ-11 UAV	1,599		1,599
181	0305233A	RQ-7 UAV	7,805		7,805
182	0307207A	AERIAL COMMON SENSOR (ACS)	0		0
183	0307665A	BIOMETRICS ENABLED INTELLIGENCE	14,114	-14,114	0
		Program Reduction		[-14,114]	
184	0702239A	AVIONICS COMPONENT IMPROVEMENT PROGRAM	0		0
185	0708045A	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	61,098		61,098
186	9999999999	CLASSIFIED PROGRAMS	4,447		4,447
		SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**1,478,386**	**-53,135**	**1,425,251**
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, ARMY	**10,333,392**	**-16,638**	**10,316,754**

Items of Special Interest

Abrams tank modernization

The budget request contained $107.5 million in PE 23735A for research and development of M1 Abrams tank upgrades.

The committee supports continued upgrades to the Army's fleet of M1 Abrams tanks. The committee notes that with the demise of the Future Combat Systems (FCS) manned ground vehicles (MGV) program, the M1 Abrams will remain the Army's premier combat platform for decades. As a result, the committee believes that an aggressive upgrade program is necessary to keep the M1 Abrams tank fleet capable of defeating all possible threats. The committee is concerned, however, that the Army's current incremental plan for M1 Abrams upgrades could result in a production break in the fiscal year 2013–14 timeframe. The committee urges the Army to develop an Abrams modernization strategy during the fiscal year 2012 budget deliberations that avoids any production gaps and integrates critical survivability technologies, such as an active protection system, in the initial tranche of upgrades.

The committee recommends $107.5 million, the full amount requested, for research and development of M1 Abrams tank upgrades.

Biometrics enabled intelligence

The budget request contained $14.1 million in research and development in PE 37665A, an operational systems development budget activity, a 6.7 budget activity, for engineering and manufacturing development (EMD), a 6.5 budget activity, for the joint personnel identification version 2 (JPIv2) biometrics collection device. The budget request also included $106.2 million in PE 33140A for biometrics design and development.

Currently, there is no JPIv2 device available to be able to initiate EMD in PE 37665A in fiscal year 2011. The Army program manager currently plans to enter EMD in fiscal year 2012, if the technology readiness level (TRL) of the devices being considered for JPIv2 can be assessed at TRL 6. However, the Army has not established its acquisition strategy outlining the number of devices it will compete in the technology demonstration phase and the EMD phase of the program.

The committee believes the Army, when requesting funding, should align the purpose of the funds requested with the appropriate budget activity. The committee also believes the $14.1 million request is premature, with sufficient funding available in PE 33140A for technology development required on JPIv2.

The committee recommends no funds, a decrease of $14.1 million, in PE 37665A for engineering and manufacturing development of JPIv2.

Bradley Fighting Vehicle modernization

The budget request contained $97.0 million in PE 23735A for research and development of Bradley Fighting Vehicle (BFV) upgrades.

The committee supports continued upgrades to the Army's fleet of BFVs and views ongoing upgrades to the BFV fleet as a critical element of the Army's overall combat vehicle modernization plan.

However, the committee is concerned that the Army is not executing funds made available in fiscal years 2009 and 2010 for BFV upgrade research and development. The committee notes that even if the Army's Ground Combat Vehicle (GCV) is fielded on schedule that it is only intended to slowly replace the M2 variant of the BFV starting in 2017. This fielding plan would leave dozens of other BFV variants in heavy brigade combat teams for an indefinite period. In addition, the committee understands that BFV chassis-based vehicles are being considered for replacement of some M113 vehicles. As a result, the committee believes that it is far too soon for the Army to stop investing in the BFV fleet, or even slowing its upgrade plans. With the GCV program just beginning, the committee views any Army move to slow or terminate BFV upgrades as premature. The committee does not believe that upgrades to the BFV fleet will impact the GCV program or diminish the need for a new Army combat vehicle. Therefore, the committee expects the Army to move quickly to establish any needed BFV upgrade requirements and execute the funds provided for this purpose. Specifically, the committee urges the Army to consider engine or other upgrades that would improve mobility and increase electrical generating capacity.

The committee recommends $97.0 million, the full amount requested, in PE 23735A for research and development of BFV upgrades.

Cellulose nanocomposites for Army infrastructure and troop protection

The budget request contained $79.1 million in PE 62784A for military engineering technology, but included no funds for the development of cellulose nanocomposite panels for ballistic protection.

The committee understands that the use of cellulose nanocomposite panels for ballistic protection could further development of cost effective, reduced weight and rapidly erectable field structures as well as class IV construction materials. The committee notes this technology could accelerate the Army's capability by addressing immediate requirements for blast and ballistic modular protective structures to meet different threat levels in overseas contingency operations.

The committee recommends an increase of $5.0 million, in PE 62784A for the development of cellulose nanocomposites for Army infrastructure and troop protection.

Early Infantry Brigade Combat Team

The budget request contained $1.6 billion for Early Infantry Brigade Combat Team (EIBCT) research and development, and $682.7 million for procurement.

In addition to the myriad of program challenges detailed elsewhere in this report, the committee is concerned with the continued lack of stability in the EIBCT program's budget request. The committee views the lack of accurate and stable budget request information as a sign that the Army's plans for the EIBCT program remain in flux almost a year after termination of the FCS program. The committee notes that since the termination of the Future Combat Systems program in June 2009, the Army has submitted an amended request for EIBCT fiscal year 2010 procurement funding,

an amended request for fiscal year 2011 procurement funds in March 2010, and two reprogramming requests for EIBCT funds in April 2010. In addition, the budget justification materials submitted in support of the fiscal year 2011 request contained numerous errors, including the embedding of advance procurement funds within procurement lines. The committee notes that the lack of fidelity in EIBCT budget request information may lead to denials of reprogramming requests, funding restrictions, or other actions taken by the committee to ensure that funding provided is not misused.

Finally, the committee understands that with the termination of the non-line-of-sight-launch system program that relevant procurement funds provided in fiscal years 2009 and 2010 appear to be more than enough to fund two full brigade sets of the remaining program elements, plus additional test assets. With the program not set to complete initial operational test and evaluation until late fiscal year 2011, the committee believes that the procurement funds requested in the budget request are premature.

The committee recommends $1.4 billion, a decrease of $208.3 million, for EIBCT research and development. The committee recommends no funds, a decrease of $682.7 million, for EIBCT procurement.

Early Infantry Brigade Combat Team unattended ground sensors

The budget request contained $7.5 million in PE 64664A for Early Infantry Brigade Combat Team (EIBCT) unattended ground sensor (UGS) development.

The committee understands that the UGS development program will reach a total funding level of approximately $130.0 million at the end of fiscal year 2010 and that limited low-rate production has been approved. The committee is concerned that despite being six years into its development, test data from technical field tests and Limited User Tests (LUT) conducted in fiscal year 2009 show that the demonstrated reliability of the Tactical-UGS and Urban-UGS is still poor. As reported by Director, Operational Test and Evaluation (DOT&E) during the most recent LUT, both systems demonstrated poor communications connectivity, inadequate transmission ranges, poor image quality, and frequent system failures. The committee notes that the Increment 1 EIBCT program acquisition decision memorandum approved by the Defense Acquisition Executive on December 24, 2009, directs DOT&E and the Army to conduct a comparative test of EIBCT-equipped units with units equipped as currently deployed for operations. The committee believes that the results of the comparative test will be critical to determining whether the program of record should be continued, modified, or terminated. If the comparative test reveals that the program of record should go forward, the committee believes that it is in the best interests of the warfighter to conduct a full and open competition prior to full-rate production. Therefore, the committee encourages the Secretary of the Army to require full and open competition prior to making full-rate procurement decisions; and to consider multi-source procurement.

The committee recommends $7.5 million in PE 64664A, the full amount requested, for UGS research and development.

Focus for Minerva research

The budget request contained $91.2 million in PE 61103A for Army university research initiatives. Of this amount, $15.3 million was requested for the Minerva Initiative.

The committee continues to note the importance of using social science research and expertise to support key Department of Defense (DOD) missions, including irregular warfare, counterinsurgency, and stability and reconstruction operations. The Secretary of Defense established the Minerva Initiative to provide one of the primary mechanisms for the Department to foster basic social science and humanities research at the university level.

After nearly two years in operation, the committee is concerned that the Department of Defense has not provided enough focus for the Minerva Initiative topics to develop an effective critical mass of talent concentrated on key mission areas. The original broad area announcement for the Minerva Initiative outlined seven topical areas. While these areas are all valuable in fostering foundational social science research for the Department and university researchers willing to work on topics of DOD interest, the committee is concerned that funds for the Minerva Initiative are spread too thinly to develop deep expertise in any of the current topic areas.

The committee recommends $96.2 million, an increase of $5.0 million, in PE 61103A to conduct research on how best to counter extremist ideologies. The committee notes elsewhere in this report on how the Department might structure such a counter-ideology program and how Minerva might support such a program.

Future Combat Systems system-of-systems engineering and program management

The budget request contained $568.7 million in PE 64661A for Future Combat Systems (FCS) system-of-systems engineering and program management.

The committee remains concerned that more than a year after the Secretary of Defense directed the Army to terminate the FCS program of record that the contract for FCS has not been renegotiated to account for the dramatically reduced scope of the program, which is now the Early Infantry Brigade Combat Team program. The committee believes that the large amount of contractor "system-of-systems" integration and overhead requested exceeds what is needed given the reduction of the FCS program from 18 to just 4 major program elements. The committee expects the renegotiated contract to require significantly less contractor overhead, program management, and systems integration in fiscal year 2011. In addition, the committee understands that termination costs for the non-line of sight cannon program will be substantially lower than originally forecast.

The committee recommends $497.4 million, a decrease of $71.3 million, in PE 64661A for FCS system-of-systems engineering and program management.

Ground Combat Vehicle program

The budget request contained $934.4 million in PE 65625A for development of the Army Ground Combat Vehicle (GCV).

The committee supports the Army's move away from the Future Combat Systems (FCS) manned ground vehicle (MGV) path to modernizing the Army's combat vehicle fleet. In the committee report (H. Rept. 110–652) accompanying the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009, the committee noted that it was not inclined to support the high-risk path the Army was on with the MGV family of vehicles, which the committee was concerned would encounter significant technical challenges and, in the end, prove unaffordable given the Army's many other needs. The committee believes that the projected cost of the MGVs, along with requirements ill-suited for the current operational environment, set the MGV effort on its ultimate path to termination by the Secretary of Defense in April 2009.

The committee supports the initial acquisition strategy for the GCV program, which appears to be more disciplined, and focused on producing a single variant of a new ground combat vehicle with a design flexible enough to accommodate future upgrades. The committee believes that a future mix of upgraded M1 Abrams tanks, upgraded M2 Bradley fighting vehicles, and new GCVs will provide the Army with a flexible mix of armored fighting platforms. In addition, the committee supports the current acquisition strategy for GCV that maintains competition throughout the technology development, and engineering and manufacturing development phases.

However, the committee is concerned with some of the requirements in place for the GCV, which the committee believes are extremely ambitious in some areas. The committee notes that it was, first and foremost, poorly thought-through requirements that led FCS MGVs to eventual termination. Specifically, early limitations on MGV weight and size, based on what turned out to be flawed operational concepts, including C–130 transportability, led to an overly-complex MGV design that resulted in cost growth, unplanned weight increases, and significant schedule delays. The committee is concerned that, once again, the Army may be asking the defense industry to build a "gold-plated" vehicle that may take longer to develop than planned and prove to be extremely expensive to procure.

The committee is also concerned that the Army chose to release a detailed request for proposals in February 2010, a full eight months before it completes the analysis of alternatives (AOA) for the GCV program. The Army's choice to do so suggests that it is a pro-forma exercise that will in fact have little bearing on the initial contract awards planned for September 2010, and that the Army will not seriously consider upgrading or modifying current platforms.

Therefore, the committee urges the Army to take two actions. First, the committee believes the Army must carefully review the requirements for the GCV program and consider a more incremental approach that separates "needs" from "wants." While the committee supports the program's early focus on vehicle and crew survivability, the committee is concerned that other requirements may prove too costly and complex. For example, while the committee understands that deployment of non-lethal weapons, the ability to intercept direct and indirect fire threats, aggressive fuel efficiency improvements, and the ability to defeat heavily armored vehicles at extended range may be desirable, it is concerned that

requiring these capabilities in the initial GCV model could needlessly complicate the vehicle's design, and could be included as incremental upgrades at a later time. Second, after streamlining the GCV requirements, the committee recommends that the Army conduct a thorough AOA before proceeding to technology development contract awards. Specifically, the committee believes the Army should carefully consider whether or not it is possible to upgrade current vehicles, including some foreign designs, to meet baseline GCV requirements on an accelerated schedule that could get a vehicle in the hands of troops more quickly than the current seven-year timeline.

The committee recommends $934.4 million, the full amount requested, for the Army GCV program.

Maingate tactical network architecture

The committee supports the Joint Tactical Radio System (JTRS) program, but encourages the Army to explore alternative network solutions in order to mitigate the risk of JTRS fielding delays. The committee believes that one alternative could be provided by the Defense Advanced Research Projects Agency Maingate network gateway technology, which is intended to enable mobile ad hoc network communications between analogue and digital Army radio systems. The committee understands that the Army has conducted limited testing of networks using Maingate technology. Therefore, the committee directs the Director, Defense Research and Engineering to provide a report to the congressional defense committees by January 30, 2011, comparing the technological readiness, test performance, reliability, and cost of a notional Army tactical network using the JTRS Ground Mobile Radio running the Wideband Networking Waveform and Soldier Radio Waveform, and the Maingate network gateway. The report should also include a detailed description of the notional network's composition and size.

Medium Extended Air Defense System

The committee is concerned that the tri-national Medium Extended Air Defense System (MEADS) co-development program will deliver a capability that is not integrated with the Army's Integrated Air and Missile Defense (IAMD) architecture and joint operational concept. The Army's IAMD architecture relies on the IAMD Battle Command System (IBCS) to provide battle management and command and control (C2) across all Army air and missile defense sensors and shooters. IBCS also provides the interface to other air and missile defense battle management and C2 systems such as the Missile Defense Agency's Command and Control, Battle Management, and Communications (C2BMC) and the Navy's Cooperative Engagement Capability (CEC), which enables access to their sensors and interceptor systems. However, the MEADS program, as currently planned, does not include the IBCS.

The committee is aware that the United States requested that its international partners restructure the MEADS program in the fall of 2008 and has proposed substituting IBCS as the MEADS battle manager. The committee believes that both United States and coalition forces benefit by leveraging a battle management and C2 system that enables access to a full complement of air and missile defense systems.

The committee therefore directs the Secretary of Defense to provide a report to the congressional defense committees by December 1, 2010, evaluating the options for restructuring the MEADS program structure and governance. The evaluation should include, at a minimum, an assessment of cost, schedule, performance, and international implications for each option.

Military engineering advanced technology

The budget request contained $27.4 million in PE 63734A for military engineering advanced technology.

The committee notes that budget justification materials indicate that $20.5 million of this amount is for "Deployable Force Protection Technology Integration Demonstrations and Red Teaming." The committee does not believe the demonstration and red teaming work described requires the requested funding level.

The committee recommends $17.4 million, a decrease of $10.0 million, in PE 63734A for military engineering advanced development.

Non-line-of-sight launch system

The budget request contained $81.3 million in PE 64646A for non-line-of-sight launch system (NLOS–LS) research and development.

The committee notes that the Army terminated the NLOS–LS program in April 2010. However, the committee is concerned that the Army chose to terminate a program that had been touted for years as a key element in improving the lethality of light infantry brigades. The committee is also concerned that the Army is walking away from a $1.0 billion investment in research and development for this system. While the committee understands the need for the Army to reduce redundancy and fund other priorities, the committee believes that in this case the Army could have extended the engineering and manufacturing development phase for another year at a modest cost. This extension could have at least provided the Army with more options for procuring different versions of the missile, perhaps at a lower unit price. As a result, the committee has provided additional funding to the Navy elsewhere in this title to complete development of the NLOS–LS program. In addition, the committee directs the Secretary of the Army to provide a report to the congressional defense committees by February 1, 2011, on how it can use some of the technology developed under the NLOS–LS program in the future.

The committee recommends no funds, a decrease of $81.3 million, in PE 64646A for NLOS–LS research and development.

Paladin Integrated Management program

The budget request contained $53.6 million in PE 64854A for Paladin Integrated Management (PIM) program research and development.

The committee notes that the Army has delayed the planned milestone C low-rate initial production decision for the PIM program, due to technological development challenges. As a result, the committee believes additional research and development funds are needed for the PIM program in fiscal year 2011.

The committee recommends $105.6 million, an increase of $52.0 million, in PE 64854A for the PIM program.

Self-inerting munitions technology development

The budget request contained $42.6 million in PE 62624A for weapons and munitions technology, but included no funds for self-inerting munitions technology development.

The committee notes unexploded ordnance (UXO) is common to all munitions, and that it is particularly significant in the case of cluster munitions where the UXO rate can be as high as 20 to 30 percent. The committee recognizes these items function as unintended landmines, limiting battle-space command and control through increased hazards to friendly forces during combat operations. They also pose continued hazards to civilians and peacekeepers in post-conflict environments. The committee understands the purpose of this program is to develop technology that removes humanitarian hazards, prevents illicit reuse, and protects the environment from explosives in UXO.

The committee recommends an increase of $3.0 million in PE 62624A for the development of self-inerting munition technology.

Social science research capacity

The budget request contained $195.8 million in PE 61102A, $429.8 million in PE 61153N, and $351.0 million in PE 61102F for basic research activities, including support for specific researchers.

The committee is aware that the Department of Defense has a program for supporting early career postdoctoral scientists and engineers by funding creative research opportunities. Each military department sponsors a Young Investigator Program (YIP), or some equivalent, that funds research by exceptional young faculty members in order to encourage their teaching and research careers to provide the Department of Defense with a future pipeline of scientific talent.

Historically, YIP and similar programs have focused on supporting researchers in traditional physical and biological sciences of interest to the Department. With the increasing importance and emphasis on social science research, the committee believes that the Department of Defense should leverage YIP to encourage promising young social science researchers as well.

Therefore, the committee recommends $198.8 million, an increase of $3.0 million, in PE 61102A; $432.8 million, an increase of $3.0 million, in PE 61153N; and $354.0 million, an increase of $3.0 million, in PE 61102F for YIP and equivalent programs to fund promising faculty members to encourage social science research that supports defense needs.

Stryker vehicle improvised explosive device mitigation technology

The committee notes that attacks on Stryker vehicles in Operation Enduring Freedom (OEF) have resulted in significant casualties, and that the Army is researching a new "double V" hull design to provide improved protection against improvised explosive devices (IED). In addition to this effort, the committee understands that the Joint Improvised Explosive Device Defeat Organization (JIEDDO) is evaluating other IED survivability technologies that could be applied to a wide range of military vehicles, including

Army Stryker vehicles. These technologies include roof or side-mounted IED blast-attenuation seating systems, rocket propelled grenade fence armor, and IED mine blast armor kits, all of which could mitigate the effects of IED attacks in OEF. The committee also understands that some of these technologies have already been fielded on Marine Corps and North Atlantic Treaty Organization ally vehicles in OEF. Further, the committee understands that these technologies could be installed in the near-term on current Army Stryker vehicles during reset or in theater. Therefore, the committee directs the Director, JIEDDO to provide a report by January 30, 2011, to the congressional defense committees evaluating these technologies, their potential for installation on existing Stryker or other vehicles, and any actions taken by JIEDDO or the Army to field these technologies.

Tactical electronic surveillance systems

The budget request contained $17.9 million in PE 63766A for tactical electronic surveillance systems.

The committee notes that budget justification materials indicate that $9.0 million of this amount is for requirements analysis and validation, and that this represents a $5.0 million increase over the fiscal year 2010 funding level for this project. The committee does not believe the activities described justify this increase in funds.

The committee recommends $12.9 million, a decrease of $5.0 million, in PE 63766A for tactical electronic surveillance systems advanced development.

NAVY RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $17.7 billion for Navy research, development, test, and evaluation (RDT&E). The committee recommends $18.0 billion, an increase of $285.2 million to the budget request.

The committee recommendations for the fiscal year 2011 research, development, test, and evaluation, Navy are identified in the table below. Major changes to the Navy request are discussed following the table.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY					
BASIC RESEARCH					
001	0601103N	UNIVERSITY RESEARCH INITIATIVES	108,679	9,500	118,179
		Gulf of Mexico/ Texas Border Geoid Model		[2,000]	
		Modernization of Marine Research Facility Pier, San Diego		[7,500]	
002	0601152N	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	17,979		17,979
003	0601153N	DEFENSE RESEARCH SCIENCES	429,767	10,000	439,767
		High-Precision Nanoparticle Formation Control		[1,000]	
		Navy Educational Outreach		[1,000]	
		ONAMI Nanoelectronics, Nanometrology and Nanobiotechnology (N3I)		[5,000]	
		Social Science Research Capacity		[3,000]	
		SUBTOTAL, BASIC RESEARCH	**556,425**	**19,500**	**575,925**
APPLIED RESEARCH					
004	0602114N	POWER PROJECTION APPLIED RESEARCH	98,150		98,150
005	0602123N	FORCE PROTECTION APPLIED RESEARCH	107,448	7,000	114,448
		Applied Research in Intelligent Autonomous Systems (ARIAS)		[1,500]	
		Harbor Shield Homeland Defense Port Security Initiative		[5,500]	
006	0602131M	MARINE CORPS LANDING FORCE TECHNOLOGY	43,776		43,776
007	0602234N	MATERIALS, ELECTRONICS AND COMPUTER TECHNOLOGY	0		0
008	0602235N	COMMON PICTURE APPLIED RESEARCH	70,168	5,150	75,318
		Cognitive Radio Institute		[1,650]	
		High Bandwidth, Mobile Medical Communications Platform to Revolutionize Rural Health Care		[3,500]	
009	0602236N	WARFIGHTER SUSTAINMENT APPLIED RESEARCH	113,724		113,724

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
010	0602271N	ELECTROMAGNETIC SYSTEMS APPLIED RESEARCH	83,902	5,500	89,402
		Photonic Digital-Beamforming System		[5,500]	
011	0602435N	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH	49,491		49,491
012	0602651M	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH	6,002		6,002
013	0602747N	UNDERSEA WARFARE APPLIED RESEARCH	69,186	5,000	74,186
		Alternative Power System Testing for Innovative Sensor Delivery and Deployment Concepts		[5,000]	
014	0602782N	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH	36,833		36,833
		SUBTOTAL, APPLIED RESEARCH	**678,680**	**22,650**	**701,330**
ADVANCED TECHNOLOGY DEVELOPMENT					
015	0603114N	POWER PROJECTION ADVANCED TECHNOLOGY	117,908	2,500	120,408
		High Resolution Anti-Mine UAV-based System		[2,500]	
016	0603123N	FORCE PROTECTION ADVANCED TECHNOLOGY	61,877	7,000	68,877
		Future Logistics Immersive Training Environment (FLITE)		[3,000]	
		Mobile Laser Deposition Work Cell		[3,000]	
		Over the Horizon Vessel Tracking		[1,000]	
017	0603235N	COMMON PICTURE ADVANCED TECHNOLOGY	96,720	-40,900	55,820
		High-Integrity Global Positioning System (HIGPS)		[-40,900]	
018	0603236N	WARFIGHTER SUSTAINMENT ADVANCED TECHNOLOGY	98,261		98,261
019	0603271N	ELECTROMAGNETIC SYSTEMS ADVANCED TECHNOLOGY	82,143		82,143
020	0603640M	USMC ADVANCED TECHNOLOGY DEMONSTRATION (ATD)	115,089		115,089
021	0603651M	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT	11,131		11,131
022	0603729N	WARFIGHTER PROTECTION ADVANCED TECHNOLOGY	18,076	2,400	20,476
		Navy Special Warfare Performance and Injury Prevention Program for SBT 22 at Stennis Space Center		[2,400]	

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
023	0603747N	UNDERSEA WARFARE ADVANCED TECHNOLOGY	49,276		49,276
024	0603758N	NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS	53,177		53,177
025	0603782N	MINE AND EXPEDITIONARY WARFARE ADVANCED TECHNOLOGY	21,941		21,941
		SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**725,599**	**-29,000**	**696,599**
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
026	0603207N	AIR/OCEAN TACTICAL APPLICATIONS	123,331		123,331
027	0603216N	AVIATION SURVIVABILITY	9,480		9,480
028	0603237N	DEPLOYABLE JOINT COMMAND AND CONTROL	4,275		4,275
029	0603254N	ASW SYSTEMS DEVELOPMENT	8,249		8,249
030	0603261N	TACTICAL AIRBORNE RECONNAISSANCE	6,452		6,452
031	0603382N	ADVANCED COMBAT SYSTEMS TECHNOLOGY	1,658		1,658
032	0603502N	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES	81,347		81,347
033	0603506N	SURFACE SHIP TORPEDO DEFENSE	57,796		57,796
034	0603512N	CARRIER SYSTEMS DEVELOPMENT	93,830		93,830
035	0603513N	SHIPBOARD SYSTEM COMPONENT DEVELOPMENT	51		51
036	0603525N	PILOT FISH	81,784		81,784
037	0603527N	RETRACT LARCH	142,858		142,858
038	0603536N	RETRACT JUNIPER	134,497		134,497
039	0603542N	RADIOLOGICAL CONTROL	1,358		1,358
040	0603553N	SURFACE ASW	21,673		21,673
041	0603561N	ADVANCED SUBMARINE SYSTEM DEVELOPMENT	608,566	4,000	612,566
		Development of Hybrid Multi-Functional Composites for Submarine Structures		[4,000]	
042	0603562N	SUBMARINE TACTICAL WARFARE SYSTEMS	5,590		5,590
043	0603563N	SHIP CONCEPT ADVANCED DESIGN	17,883	10,000	27,883
		Composite Deckhouse Design for DDG 51 Class Ships		[10,000]	
044	0603564N	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES	1,796	5,000	6,796

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		Hydrodynamic Test Facilities		[5,000]	
045	0603570N	ADVANCED NUCLEAR POWER SYSTEMS	366,509		366,509
046	0603573N	ADVANCED SURFACE MACHINERY SYSTEMS	5,459	2,500	7,959
		Small Scale Nuclear Reactors		[2,500]	
047	0603576N	CHALK EAGLE	447,804		447,804
048	0603581N	LITTORAL COMBAT SHIP (LCS)	226,288	79,250	305,538
		Axial Flow High Power Density Waterjets		[4,250]	
		Navy Non-Line of Sight Launch System Development		[75,000]	
049	0603582N	COMBAT SYSTEM INTEGRATION	24,344		24,344
050	0603609N	CONVENTIONAL MUNITIONS	5,388		5,388
051	0603611M	MARINE CORPS ASSAULT VEHICLES	242,765		242,765
052	0603635M	MARINE CORPS GROUND COMBAT/SUPPORT SYSTEM	40,505	800	41,305
		USMC Military Fleet Simulation Computer Co-simulation		[800]	
053	0603654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	25,873		25,873
054	0603658N	COOPERATIVE ENGAGEMENT	52,282		52,282
055	0603713N	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT	13,560		13,560
056	0603721N	ENVIRONMENTAL PROTECTION	20,207		20,207
057	0603724N	NAVY ENERGY PROGRAM	30,403		30,403
058	0603725N	FACILITIES IMPROVEMENT	3,746	8,700	12,446
		Crtical Power Securitization for Naval Installations		[3,700]	
		Undersea Perimeter Security Integrated Defense Environment		[5,000]	
059	0603734N	CHALK CORAL	71,920		71,920
060	0603739N	NAVY LOGISTIC PRODUCTIVITY	4,139	3,500	7,639
		Development of Flame Retardant Textile Fabric for Military Clothing and Other Applications		[1,500]	
		Navy In Transit Visibility System- GTMO		[2,000]	

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
061	0603746N	RETRACT MAPLE	219,463		219,463
062	0603748N	LINK PLUMERIA	58,030		58,030
063	0603751N	RETRACT ELM	183,187		183,187
064	0603755N	SHIP SELF DEFENSE	4,385		4,385
065	0603764N	LINK EVERGREEN	41,433		41,433
066	0603787N	SPECIAL PROCESSES	36,457		36,457
067	0603790N	NATO RESEARCH AND DEVELOPMENT	9,196		9,196
068	0603795N	LAND ATTACK TECHNOLOGY	905		905
069	0603851M	NONLETHAL WEAPONS	43,272		43,272
070	0603860N	JOINT PRECISION APPROACH AND LANDING SYSTEMS	159,151		159,151
071	0603879N	SINGLE INTEGRATED AIR PICTURE (SIAP) SYSTEM ENGINEER (SE)	0		0
072	0603889N	COUNTERDRUG RDT&E PROJECTS	0		0
073	0603925N	DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS	0	4,650	4,650
		High Power Laser Technologies Initiative (UCF)		[4,650]	
074	0604272N	TACTICAL AIR DIRECTIONAL INFRARED COUNTERMEASURES (TADIRCM)	51,693		51,693
075	0604653N	JOINT COUNTER RADIO CONTROLLED IED ELECTRONIC WARFARE (JCREW)	56,542		56,542
076	0604659N	PRECISION STRIKE WEAPONS DEVELOPMENT PROGRAM	25,121		25,121
077	0604707N	SPACE AND ELECTRONIC WARFARE (SEW) ARCHITECTURE/ENGINEERING SUPPORT	34,793		34,793
078	0303354N	ASW SYSTEMS DEVELOPMENT - MIP	2,161		2,161
079	0303562N	SUBMARINE TACTICAL WARFARE SYSTEMS - MIP	4,253		4,253
080	0304270N	ELECTRONIC WARFARE DEVELOPMENT - MIP	663		663
		SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**3,914,371**	**118,400**	**4,032,771**
SYSTEM DEVELOPMENT & DEMONSTRATION					
081	0604212N	OTHER HELO DEVELOPMENT	44,329		44,329
082	0604214N	AV-8B AIRCRAFT - ENG DEV	22,867		22,867
083	0604215N	STANDARDS DEVELOPMENT	45,667		45,667

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
084	0604216N	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	55,792		55,792
085	0604218N	AIR/OCEAN EQUIPMENT ENGINEERING	5,735		5,735
086	0604221N	P-3 MODERNIZATION PROGRAM	3,574		3,574
087	0604230N	WARFARE SUPPORT SYSTEM	3,733		3,733
088	0604231N	TACTICAL COMMAND SYSTEM	89,955		89,955
089	0604234N	ADVANCED HAWKEYE	171,132		171,132
090	0604245N	H-1 UPGRADES	60,498		60,498
091	0604261N	ACOUSTIC SEARCH SENSORS	64,834		64,834
092	0604262N	V-22A	46,070		46,070
093	0604264N	AIR CREW SYSTEMS DEVELOPMENT	8,689		8,689
094	0604269N	EA-18	22,042		22,042
095	0604270N	ELECTRONIC WARFARE DEVELOPMENT	80,819		80,819
096	0604273N	VH-71A EXECUTIVE HELO DEVELOPMENT	159,785		159,785
097	0604274N	NEXT GENERATION JAMMER (NGJ)	120,602		120,602
098	0604280N	JOINT TACTICAL RADIO SYSTEM - NAVY (JTRS-NAVY)	687,723		687,723
099	0604300N	SC-21 TOTAL SHIP SYSTEM ENGINEERING	0		0
100	0604307N	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING	193,933		193,933
101	0604311N	LPD-17 CLASS SYSTEMS INTEGRATION	1,373	5,000	6,373
		Land Based Test Facility		[5,000]	
102	0604329N	SMALL DIAMETER BOMB (SDB)	44,091	-26,000	18,091
		Small Diameter Bomb Increment II		[-26,000]	
103	0604366N	STANDARD MISSILE IMPROVEMENTS	96,186		96,186
104	0604373N	AIRBORNE MCM	45,885		45,885
105	0604378N	NAVAL INTEGRATED FIRE CONTROL - COUNTER AIR SYSTEMS ENGINEERING	21,517		21,517
106	0604501N	ADVANCED ABOVE WATER SENSORS	274,371		274,371
107	0604503N	SSN-688 AND TRIDENT MODERNIZATION	118,897		118,897

Title II - Research, Development, Test and Evaluation

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
108	0604504N	AIR CONTROL	5,665		5,665
109	0604512N	SHIPBOARD AVIATION SYSTEMS	70,117	3,500	73,617
		Aviation Data Management and Control System for Amphibious Ships		[3,500]	
110	0604518N	COMBAT INFORMATION CENTER CONVERSION	5,044		5,044
111	0604558N	NEW DESIGN SSN	155,489		155,489
112	0604562N	SUBMARINE TACTICAL WARFARE SYSTEM	50,537		50,537
113	0604567N	SHIP CONTRACT DESIGN/ LIVE FIRE T&E	153,686		153,686
114	0604574N	NAVY TACTICAL COMPUTER RESOURCES	4,443		4,443
115	0604601N	MINE DEVELOPMENT	5,455		5,455
116	0604610N	LIGHTWEIGHT TORPEDO DEVELOPMENT	25,282		25,282
117	0604654N	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	10,489		10,489
118	0604703N	PERSONNEL, TRAINING, SIMULATION, AND HUMAN FACTORS	10,759		10,759
119	0604727N	JOINT STANDOFF WEAPON SYSTEMS	12,567		12,567
120	0604755N	SHIP SELF DEFENSE (DETECT & CONTROL)	45,930		45,930
121	0604756N	SHIP SELF DEFENSE (ENGAGE: HARD KILL)	5,860		5,860
122	0604757N	SHIP SELF DEFENSE (ENGAGE: SOFT KILL/EW)	84,525		84,525
123	0604761N	INTELLIGENCE ENGINEERING	6,820		6,820
124	0604771N	MEDICAL DEVELOPMENT	12,337	5,000	17,337
		Chronic Lyme Medical Social Research Network		[1,000]	
		U.S. Navy Pandemic Influenza Vaccine Program		[4,000]	
125	0604777N	NAVIGATION/ID SYSTEM	66,636		66,636
126	0604800M	JOINT STRIKE FIGHTER (JSF) - EMD	667,916	92,300	760,216
		Block 4 Premature need		[-29,000]	
		F-35 Competitive Engine		[121,300]	
127	0604800N	JOINT STRIKE FIGHTER (JSF)	707,791	92,200	799,991

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		Block 4 Premature Need		[-29,100]	
		F-35 Competitive Engine		[121,300]	
128	0605013M	INFORMATION TECHNOLOGY DEVELOPMENT	22,783		22,783
129	0605013N	INFORMATION TECHNOLOGY DEVELOPMENT	28,280		28,280
130	0605018N	NAVY INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (N-IMHRS)	27,444		27,444
131	0605212N	CH-53K RDTE	577,435		577,435
132	0605430N	C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)	0		0
133	0605450N	JOINT AIR-TO-GROUND MISSILE (JAGM)	100,846		100,846
134	0605500N	MULTI-MISSION MARITIME AIRCRAFT (MMA)	929,240		929,240
135	0204201N	CG(X)	0		0
136	0204202N	DDG-1000	549,241		549,241
137	0304231N	TACTICAL COMMAND SYSTEM - MIP	1,318		1,318
138	0304503N	SSN-688 AND TRIDENT MODERNIZATION - MIP	1,415		1,415
139	0304785N	TACTICAL CRYPTOLOGIC SYSTEMS	17,019		17,019
		SUBTOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**6,852,468**	**172,000**	**7,024,468**
RDT&E MANAGEMENT SUPPORT					
140	0604256N	THREAT SIMULATOR DEVELOPMENT	18,755		18,755
141	0604258N	TARGET SYSTEMS DEVELOPMENT	66,066		66,066
142	0604759N	MAJOR T&E INVESTMENT	37,522		37,522
143	0605152N	STUDIES AND ANALYSIS SUPPORT - NAVY	8,149		8,149
144	0605154N	CENTER FOR NAVAL ANALYSES	49,165		49,165
145	0605502N	SMALL BUSINESS INNOVATIVE RESEARCH	0		0
146	0605804N	TECHNICAL INFORMATION SERVICES	662	5,000	5,662
		Center for Commercialization of Advanced Technology		[5,000]	
147	0605853N	MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT	58,329		58,329

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
148	0605856N	STRATEGIC TECHNICAL SUPPORT	3,451		3,451
149	0605861N	RDT&E SCIENCE AND TECHNOLOGY MANAGEMENT	72,094		72,094
150	0605863N	RDT&E SHIP AND AIRCRAFT SUPPORT	95,332		95,332
151	0605864N	TEST AND EVALUATION SUPPORT	376,418		376,418
152	0605865N	OPERATIONAL TEST AND EVALUATION CAPABILITY	15,746		15,746
153	0605866N	NAVY SPACE AND ELECTRONIC WARFARE (SEW) SUPPORT	4,013		4,013
154	0605867N	SEW SURVEILLANCE/RECONNAISSANCE SUPPORT	19,700		19,700
155	0605873M	MARINE CORPS PROGRAM WIDE SUPPORT	17,721		17,721
156	0305885N	TACTICAL CRYPTOLOGIC ACTIVITIES	1,859		1,859
157	0804758N	SERVICE SUPPORT TO JFCOM, JNTC	4,260		4,260
158	0909999N	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	0		0
		SUBTOTAL, RDT&E MANAGEMENT SUPPORT	**849,242**	**5,000**	**854,242**
OPERATIONAL SYSTEMS DEVELOPMENT					
160	0604227N	HARPOON MODIFICATIONS	0		0
161	0604402N	UNMANNED COMBAT AIR VEHICLE (UCAV) ADVANCED COMPONENT AND PROTOTYP	266,368		266,368
162	0101221N	STRATEGIC SUB & WEAPONS SYSTEM SUPPORT	81,184		81,184
163	0101224N	SSBN SECURITY TECHNOLOGY PROGRAM	34,997		34,997
164	0101226N	SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	6,815		6,815
165	0101402N	NAVY STRATEGIC COMMUNICATIONS	10,331		10,331
166	0203761N	RAPID TECHNOLOGY TRANSITION (RTT)	35,120		35,120
167	0204136N	F/A-18 SQUADRONS	148,438		148,438
168	0204152N	E-2 SQUADRONS	19,011		19,011
169	0204163N	FLEET TELECOMMUNICATIONS (TACTICAL)	26,894		26,894
170	0204229N	TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER (TMPC)	10,587		10,587
171	0204311N	INTEGRATED SURVEILLANCE SYSTEM	23,464		23,464
172	0204413N	AMPHIBIOUS TACTICAL SUPPORT UNITS (DISPLACEMENT CRAFT)	4,357		4,357

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
173	0204571N	CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	50,750		50,750
174	0204574N	CRYPTOLOGIC DIRECT SUPPORT	1,519		1,519
175	0204575N	ELECTRONIC WARFARE (EW) READINESS SUPPORT	39,398		39,398
176	0205601N	HARM IMPROVEMENT	14,207		14,207
177	0205604N	TACTICAL DATA LINKS	28,854		28,854
178	0205620N	SURFACE ASW COMBAT SYSTEM INTEGRATION	32,877		32,877
179	0205632N	MK-48 ADCAP	26,234		26,234
180	0205633N	AVIATION IMPROVEMENTS	133,611	2,000	135,611
		Unmanned Aerial Systems Maintenance, Repair and Overhaul Advanced Technologies Initiative		[2,000]	
181	0205658N	NAVY SCIENCE ASSISTANCE PROGRAM	3,535		3,535
182	0205675N	OPERATIONAL NUCLEAR POWER SYSTEMS	74,229		74,229
183	0206313M	MARINE CORPS COMMUNICATIONS SYSTEMS	245,298		245,298
184	0206623M	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS	100,424	-30,400	70,024
		Marine Personnel Carrier Program Delay		[-20,000]	
		PERM Program Reduction		[-10,400]	
185	0206624M	MARINE CORPS COMBAT SERVICES SUPPORT	19,466		19,466
186	0206625M	USMC INTELLIGENCE/ELECTRONIC WARFARE SYSTEMS (MIP)	20,316		20,316
187	0207161N	TACTICAL AIM MISSILES	912		912
188	0207163N	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	2,633		2,633
189	0208058N	JOINT HIGH SPEED VESSEL (JHSV)	3,586		3,586
194	0303109N	SATELLITE COMMUNICATIONS (SPACE)	422,268	5,000	427,268
		UHF Hosted Payloads Program		[5,000]	
195	0303138N	CONSOLIDATED AFLOAT NETWORK ENTERPRISE SERVICES (CANES)	63,563		63,563
196	0303140N	INFORMATION SYSTEMS SECURITY PROGRAM	25,934		25,934
197	0303158M	JOINT COMMAND AND CONTROL PROGRAM (JC2)	0		0
198	0303158N	JOINT COMMAND AND CONTROL PROGRAM (JC2)	0		0

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
199	0303238N	CONSOLIDATED AFLOAT NETWORK ENTERPRISE SERVICES (CANES) - MIP	8,375		8,375
201	0305149N	COBRA JUDY	36,527		36,527
202	0305160N	NAVY METEOROLOGICAL AND OCEAN SENSORS-SPACE (METOC)	63,878		63,878
203	0305192N	MILITARY INTELLIGENCE PROGRAM (MIP) ACTIVITIES	4,435		4,435
204	0305204N	TACTICAL UNMANNED AERIAL VEHICLES	35,212		35,212
205	0305205N	ENDURANCE UNMANNED AERIAL VEHICLES	0		0
206	0305206N	AIRBORNE RECONNAISSANCE SYSTEMS	0		0
207	0305207N	MANNED RECONNAISSANCE SYSTEMS	19,263		19,263
208	0305208M	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	8,377		8,377
209	0305208N	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	16,665		16,665
210	0305220N	RQ-4 UAV	529,250		529,250
211	0305231N	MQ-8 UAV	10,665		10,665
212	0305232M	RQ-11 UAV	512		512
213	0305233N	RQ-7 UAV	934		934
214	0305234M	SMALL (LEVEL 0) TACTICAL UAS (STUASL0)	26,209		26,209
215	0305234N	SMALL (LEVEL 0) TACTICAL UAS (STUASL0)	18,098		18,098
216	0307207N	AERIAL COMMON SENSOR (ACS)	0		0
217	0307217N	EP-3E REPLACEMENT (EPX)	0		0
218	0308601N	MODELING AND SIMULATION SUPPORT	8,158		8,158
219	0702207N	DEPOT MAINTENANCE (NON-IF)	18,649		18,649
220	0702239N	AVIONICS COMPONENT IMPROVEMENT PROGRAM	3,250		3,250
221	0708011N	INDUSTRIAL PREPAREDNESS	46,173		46,173
222	0708730N	MARITIME TECHNOLOGY (MARITECH)	0		0
223	9999999999	CLASSIFIED PROGRAMS	1,284,901		1,284,901
		SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**4,116,711**	**-23,400**	**4,093,311**

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, NAVY	17,693,496	285,150	17,978,646

Items of Special Interest

Composite deckhouse design for DDG 51 flight III class ships

The budget request contained $17.9 million in PE 63563N for ship concept advanced design, but contained no funds for development of a composite deckhouse for flight III of the DDG 51 class destroyer.

The committee supports the Navy decision to re-start the DDG 51 class destroyer acquisition program and to work toward a flight III version of the vessel by fiscal year 2016. To support the goal of that flight of ships of advanced radar and ship control systems, the Navy must make significant design changes to the class, in order to upgrade power and cooling capability. The committee realizes that those design changes have the potential to add significant weight to the vessel which could limit operational effectiveness. The committee supports an effort, aimed at reducing overall life-cycle costs of the class, to develop a composite deckhouse for the flight III ships that would significantly reduce the weight to center of buoyancy ratio and increase operational effectiveness of the vessel. The committee notes that the technological advancements for the composite deckhouse of the DDG 1000 program can significantly aid this effort.

The committee recommends an increase of $10.0 million in PE 63563N for development of a composite deckhouse for potential use on flight III DDG 51 class destroyers.

Development of hybrid multi-functional composites for submarine structures

The budget request contained $608.6 million in PE 63561N for advanced submarine systems development, but contained no funding for the development of hybrid multi-functional composites for submarine structures.

The committee notes the excellent results of the Virginia-class submarine program of composite technology in the areas of the wide aperture array and main ballast tank vent gratings. The committee understands the use of composites is beneficial in life-cycle maintenance costs, as well as weight savings, which are always a key element of submarine design. The committee understands that emerging technologies using hybrid composite structures have the potential to continue to reduce weight with increased strength for many submarine applications.

The committee recommends an increase of $4.0 million in PE 63561N for continued development of hybrid multi-functional composite technology.

Expeditionary Fire Support System Precision Extended Range Munition

The budget request contained $108.9 million in PE 26623M for Marine Corps ground combat support research and development. Of this amount, $10.4 million was requested for the Expeditionary Fire Support System (EFFS) Precision Extended Range Munition (PERM) program.

The committee notes that the EFFS 120mm mortar system will be capable of firing the Army Accelerated Precision Mortar Initiative (APMI) round, which will offer similar performance to the pro-

posed EFFS PERM round. The committee also notes that the PERM round will not achieve low-rate initial production until fiscal year 2015 and that the Army APMI round is set to field in early in fiscal year 2011. The committee recommends that the Marine Corps evaluate the performance of the APMI prior to beginning a development program to produce a munition with similar performance.

The committee recommends no funds, a decrease of $10.4 million, in PE 26623M for the EFFS PERM program.

Future integrated nuclear power systems

The budget request contained $366.5 million in PE 63570N for advanced nuclear power systems, but contained no funds for development of small scale pressurized water reactors suitable for destroyer-sized vessels or for alternative nuclear power systems using thorium liquid salt technology.

The committee remains committed to an all nuclear powered naval battle force. The committee notes that significant challenges in size and weight of nuclear technology make inclusion of integrated nuclear power systems on destroyer sized vessels currently impossible. Therefore, the committee believes that additional funding in engineering research and development is needed to design a smaller scale version of a naval pressurized water reactor, or to design a new reactor type potentially using a thorium liquid salt reactor developed for maritime use.

The committee recommends an increase of $2.5 million in PE 63570N for research and design efforts to develop an integrated nuclear power system capable of use on destroyer-sized vessels either using a pressurized water reactor or a thorium liquid salt reactor.

High-Integrity Global Positioning System

The budget request contained $40.9 million in PE 63235N for the High-Integrity Global Positioning System (HIGPS).

HIGPS is designed to develop the technology required to demonstrate the capability to use the existing Iridium satellite constellation to enhance current GPS navigation and timing capabilities. The benefits of this approach have not been sufficiently justified and the committee does not recommend funding for this request.

The committee recommends no funds in PE 63235N for the High-Integrity Global Positioning System, a decrease of $40.9 million from the budget request.

Marine Corps military fleet simulation computer co-simulation

The budget request contained $40.5 million in PE 63635M for Marine Corps Ground Combat/Support System, but included no funds for Marine Corps fleet simulation computer co-simulation technology programs.

The committee understands the application of computer co-simulation tools could be used to increase fuel efficiency of Marine Corps combat vehicles and tactical wheeled vehicle fleets.

The committee recommends $41.3 million, an increase of $800 thousand, in PE 63635M for fleet simulation computer co-simulation technology programs for the Marine Corps.

Marine operations, Scripps Institute

The budget request contained $108.7 million in PE 61103N for University Research Initiatives, but contained no funds for efforts to upgrade facilities used extensively by Navy research vessels at the Nimitz Marine Facility in Point Loma, California.

The committee understands the Scripps Institute of Oceanography, in affiliation with the University of California, San Diego, is undertaking a major program to replace pier and wharf facilities at their Point Loma location. The committee is aware that these facilities are extensively used by Navy research vessels and are instrumental for continued naval oceanographic projects. Because of the unique requirements of Navy research vessels and other vessels of the Department of Defense for pier supplied electrical distribution systems, information technology systems, and support services such as heavy lift cranes and advanced fendering systems, additional funding is required above the levels funded by the institution for construction of the new wharf and pier facility to effectively berth Navy research vessels.

The committee recommends an increase of $7.5 million in PE 61103N for integration of advanced electrical, information technology, crane, and associated support services of the new wharf and pier facilities at the Nimitz Marine Facility to optimize efficiency for Navy research vessels. The committee considers this funding appropriate for appropriation in the research and development account since this funding is not targeted to construction or repair but rather to upgrade the research capability of the facility.

Marine personnel carrier

The budget request contained $108.9 million in PE 26623M for Marine Corps ground combat support research and development. Of this amount, $26.8 million was requested for the Marine Personnel Carrier (MPC) program.

The committee notes that the program's planned milestone A decision in March 2010 has been indefinitely postponed. As a result, the MPC program will not need the full amount of research and development funds requested.

The committee recommends $6.8 million, a decrease of $20.0 million, in PE 26623M for Marine Personnel Carrier research and development.

Navy non-line-of-sight launch system development

The budget request contained $226.3 million in PE 63581N for Littoral Combat Ship mission module research and development but contained no funds for the non-line-of-sight launch system (NLOS–LS).

The committee notes that the Army's termination of the NLOS–LS could leave the Navy's Littoral Combat Ship (LCS) without sufficient capability to defeat small boat threats and unable to provide precision fire support to Marine Corps forces. The committee is informed that the NLOS–LS will likely require only one more year of research and development work to achieve threshold requirements. Therefore, in order to take advantage of the $1.5 billion in development funds spent to date, the committee encourages the Navy to complete development of the NLOS–LS system for use on the LCS. The committee also directs the Assistant Secretary of the

Navy for Research, Development, and Acquisition to provide a report to the congressional defense committees by December 15, 2010, on the feasibility and utility of the Navy completing development of the NLOS–LS. The report should include an analysis of possible unit cost reduction options.

The committee recommends $301.3 million, an increase of $75.0 million, in PE 63581N for research and development of the NLOS–LS for use on the LCS.

Navy Unmanned Combat Air System

The budget request contained $266.4 million in PE 64402N for the Navy's Unmanned Combat Air System (N–UCAS) development and demonstration program.

The committee notes that the N–UCAS development program is exhibiting less than optimal program execution as it relates to cost, schedule, and performance and the program is currently undergoing an acquisition strategy restructuring to improve the aforementioned areas of execution. The committee understands that the primary purpose of the N–UCAS program is to demonstrate the ability to launch and recover from an aircraft carrier a tailless, remotely piloted aircraft. However, the committee also understands that the N–UCAS program may be putting efforts towards developing low observable materials and technologies that are not required for successful completion of the required demonstration.

Therefore, the committee recommends that the Secretary of the Navy review the scope of the program for any unneeded technology development efforts that may be occurring in the N–UCAS development and demonstration program.

Next Generation Enterprise Network

In the conference report (H. Rept. 111–288) accompanying the National Defense Authorization Act for Fiscal Year 2010, the conferees expressed concern over the pace of acquisition decisions that are necessary to transition from the Navy-Marine Corps Intranet (NMCI) to the Next Generation Enterprise Network (NGEN). The committee reiterates its support for the overall segmentation strategy for NGEN, which would break the single omnibus contract of NMCI into multiple smaller contracts. The committee believes that such an approach will not only promote increased competition in the future, but it will also support the development of greater in-house capability within the Navy and provide for a level of operational control by naval personnel over the network that is not available currently under the NMCI contract.

Photonic digital beamforming systems

The budget request contained $83.9 million in PE 62271N for electromagnetic systems applied research, but contained no funds for development of photonic digital beamforming technology.

The committee is interested in the development of new technologies that accomplish multiple functions of legacy technology. One such development is the introduction of photonic digital beamforming systems. The committee believes this new technology has the potential to significantly reduce radio frequency communication paths currently used on naval warships, saving on weight, spare parts, logistics support, and personnel manning.

The committee recommends an increase of $5.5 million in PE 62271N for development of photonic digital beamforming technology.

Small diameter bomb increment II

The budget request contained $44.0 million in PE 64329N for the Small Diameter Bomb Increment II (SDB II) program.

The SDB II is to provide the warfighter the capability to attack mobile targets in all weather, from stand-off range. SDB II will be integrated on the F–15E for the Air Force and Joint Strike Fighter variants for the Navy.

The committee is aware of delays in the Air Force's SDB II contract award. The committee understands the Navy had planned to integrate and qualify the SDB II and its carriage rack onto the Joint Strike Fighter carrier and short takeoff vertical landing variants beginning in November 2009. The Air Force contract is not expected to be awarded until June 2010. The committee notes the Navy only requires six months of funding in fiscal year 2010 because the development decision has slipped for the SDB II program, causing a corresponding slip in the Navy's plans to contract for integration and qualification of the SDB II. As a result, the program office has identified $26.0 million in fiscal year 2010 funds as excess to program needs.

The committee recommends $18.0 million, a decrease of $26.0 million, in PE 64329N for the SDB II program.

Ultra High Frequency Hosted Payloads program

The budget request contained $405.7 million in PE 33109N for the Mobile User Objective System (MUOS) program, but contained no funds for the Ultra High Frequency (UHF) Hosted Payloads program.

MUOS will replace the existing UHF Follow-On (UFO) constellation and provide a much higher data rate capability for mobile users. However, the MUOS program has suffered significant schedule delays that may create an unacceptable gap in critical UHF service.

Narrowband UHF satellite communications (SATCOM) provide tactical, over-the-horizon radio links for our men and women in combat in the Republic of Iraq and the Islamic Republic of Afghanistan, as well as around the world. The committee understands that the existing UHF system is oversubscribed by 200 to 300 percent and that user requests for access to UHF SATCOM have often been denied due to a lack of available channels, forcing our troops to use less reliable line-of-sight radios. The current UFO fleet of satellites is reaching the end of life and the delays in the follow-on MUOS program risk an unacceptable degradation of service. As a result, the Navy is pursuing a diverse set of mitigation measures that provide an incremental strategy to augment the declining UHF communications capacity.

To that end, the committee encourages full utilization of commercially-hosted government payloads and the development of additional UHF augmentation by the commercial satellite industry for military use. Specifically, the committee supports the UHF Hosted Payloads program that was cancelled in February 2009 and the potential it holds both as a transitional gap-filler between the UFO

and MUOS systems, and as an ongoing augmentation providing critical support to tens of thousands of legacy UHF terminals.

The committee recommends $410.7 million, an increase of $5.0 million, in PE 33109N to explore the entire range of options beyond the MUOS program for meeting UHF SATCOM needs.

VH–(XX) acquisition program and VH–3D/VH–60N legacy fleet sustainment

The committee notes with disappointment that the Navy invested $3.3 billion in the VH–71 program with little to no return on investment for the taxpayer. Furthermore, the committee understands that termination costs for the program may reach an additional $555.0 million. Due to termination, the Navy will also be required to invest additional resources, beyond originally anticipated, to sustain the current VH–3D and VH–60N legacy fleet of executive helicopters. The committee notes that in the new program to develop a replacement Presidential helicopter, the Navy plans to produce at least two airframes, an executive model to transport the President, members of his family, and heads-of-state, and a passenger/cargo variant to support the President during times of emergency. The committee supports this acquisition strategy. Elsewhere in this title, the committee includes a provision that would require the Comptroller General to conduct an annual review of the VH–(XX) acquisition program. Details of the review requirements are contained in the legislative provisions section of this report.

AIR FORCE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $27.2 billion for Air Force research, development, test, and evaluation (RDT&E). The committee recommends $27.3 billion, an increase of $22.6 million to the budget request.

The committee recommendations for the fiscal year 2011 research, development, test and evaluation, Air Force are identified in the table below. Major changes to the Air Force request are discussed following the table.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
RESEARCH, DEVELOPMENT, TEST & EVAL, AF					
BASIC RESEARCH					
001	0601102F	DEFENSE RESEARCH SCIENCES	350,978	3,000	353,978
		Social Science Research Capacity		[3,000]	
002	0601103F	UNIVERSITY RESEARCH INITIATIVES	136,297	10,000	146,297
		Integrated Industrial Microalgae Biofuel Program		[10,000]	
003	0601108F	HIGH ENERGY LASER RESEARCH INITIATIVES	13,198		13,198
		SUBTOTAL, BASIC RESEARCH	**500,473**	**13,000**	**513,473**
APPLIED RESEARCH					
004	0602102F	MATERIALS	137,273		137,273
005	0602201F	AEROSPACE VEHICLE TECHNOLOGIES	144,699		144,699
006	0602202F	HUMAN EFFECTIVENESS APPLIED RESEARCH	87,452		87,452
007	0602203F	AEROSPACE PROPULSION	207,049		207,049
008	0602204F	AEROSPACE SENSORS	157,497	2,000	159,497
		Information Tools for Persistent Surveillance Data Sets		[2,000]	
009	0602601F	SPACE TECHNOLOGY	111,857	3,000	114,857
		Technology Research and Innovation Outreach for Space (TRIOS)		[3,000]	
010	0602602F	CONVENTIONAL MUNITIONS	61,330		61,330
011	0602605F	DIRECTED ENERGY TECHNOLOGY	103,596		103,596
012	0602702F	COMMAND CONTROL AND COMMUNICATIONS	0		0
013	0602788F	DOMINANT INFORMATION SCIENCES AND METHODS	117,283	1,000	118,283
		Cyber Boot Camp		[1,000]	
014	0602890F	HIGH ENERGY LASER RESEARCH	53,384		53,384
		SUBTOTAL, APPLIED RESEARCH	**1,181,420**	**6,000**	**1,187,420**

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
ADVANCED TECHNOLOGY DEVELOPMENT					
015	0603112F	ADVANCED MATERIALS FOR WEAPON SYSTEMS	33,414	14,700	48,114
		Additive Manufacturing Consortium		[3,000]	
		Advanced Solar Photovoltaics and Power Conversion Modules		[1,700]	
		Metals Affordability Initiative		[10,000]	
016	0603199F	SUSTAINMENT SCIENCE AND TECHNOLOGY (S&T)	2,935		2,935
017	0603203F	ADVANCED AEROSPACE SENSORS	44,677		44,677
018	0603211F	AEROSPACE TECHNOLOGY DEV/DEMO	53,588		53,588
019	0603216F	AEROSPACE PROPULSION AND POWER TECHNOLOGY	136,135		136,135
020	0603231F	CREW SYSTEMS AND PERSONNEL PROTECTION TECHNOLOGY	0		0
021	0603270F	ELECTRONIC COMBAT TECHNOLOGY	16,992		16,992
022	0603401F	ADVANCED SPACECRAFT TECHNOLOGY	83,705		83,705
023	0603444F	MAUI SPACE SURVEILLANCE SYSTEM (MSSS)	5,899		5,899
024	0603456F	HUMAN EFFECTIVENESS ADVANCED TECHNOLOGY DEVELOPMENT	24,814		24,814
025	0603601F	CONVENTIONAL WEAPONS TECHNOLOGY	15,755		15,755
026	0603605F	ADVANCED WEAPONS TECHNOLOGY	17,461		17,461
027	0603680F	MANUFACTURING TECHNOLOGY PROGRAM	39,701	2,000	41,701
		Aerial MultiAxis Platform Enhanced for C-130 Center Wing Box Removal and Replacement		[2,000]	
028	0603788F	BATTLESPACE KNOWLEDGE DEVELOPMENT AND DEMONSTRATION	32,382		32,382
029	0603789F	C3I ADVANCED DEVELOPMENT	0		0
030	0603924F	HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM	1,847		1,847
		SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT	**509,305**	**16,700**	**526,005**
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
031	0603260F	INTELLIGENCE ADVANCED DEVELOPMENT	5,019		5,019
032	0603287F	PHYSICAL SECURITY EQUIPMENT	3,576		3,576

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
033	0603423F	GLOBAL POSITIONING SYSTEM III - OPERATIONAL CONTROL SEGMENT	0		0
034	0603430F	ADVANCED EHF MILSATCOM (SPACE)	351,817		351,817
035	0603432F	POLAR MILSATCOM (SPACE)	164,232		164,232
036	0603438F	SPACE CONTROL TECHNOLOGY	45,012		45,012
037	0603742F	COMBAT IDENTIFICATION TECHNOLOGY	26,172		26,172
038	0603790F	NATO RESEARCH AND DEVELOPMENT	4,372		4,372
039	0603791F	INTERNATIONAL SPACE COOPERATIVE R&D	635		635
040	0603830F	SPACE PROTECTION PROGRAM (SPP)	8,349		8,349
041	0603845F	TRANSFORMATIONAL SATCOM (TSAT)	0		0
042	0603850F	INTEGRATED BROADCAST SERVICE	20,580		20,580
043	0603851F	INTERCONTINENTAL BALLISTIC MISSILE	66,745		66,745
044	0603854F	WIDEBAND GLOBAL SATCOM RDT&E (SPACE)	36,123		36,123
045	0603859F	POLLUTION PREVENTION	2,534		2,534
046	0603860F	JOINT PRECISION APPROACH AND LANDING SYSTEMS	13,952		13,952
047	0604015F	NEXT GENERATION BOMBER	198,957		198,957
048	0604283F	BATTLE MGMT COM & CTRL SENSOR DEVELOPMENT	0		0
049	0604327F	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM (HDBTDS) PROGRAM	22,389		22,389
050	0604330F	JOINT DUAL ROLE AIR DOMINANCE MISSILE	9,799		9,799
051	0604337F	REQUIREMENTS ANALYSIS AND MATURATION	34,339		34,339
052	0604436F	NEXT-GENERATION MILSATCOM TECHNOLOGY DEVELOPMENT	0	50,000	50,000
		Program Increase		[50,000]	
053	0604635F	GROUND ATTACK WEAPONS FUZE DEVELOPMENT	32,513		32,513
054	0604796F	ALTERNATIVE FUELS	24,064		24,064
055	0604830F	AUTOMATED AIR-TO-AIR REFUELING	85		85
056	0604857F	OPERATIONALLY RESPONSIVE SPACE	93,978	40,000	133,978
		Program Increase		[40,000]	

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
057	0604858F	TECH TRANSITION PROGRAM	12,260		12,260
058	0305178F	NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NP	325,505	-300,000	25,505
		Program Reduction		[-300,000]	
		SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**1,503,007**	**-210,000**	**1,293,007**
SYSTEM DEVELOPMENT & DEMONSTRATION					
059	0603840F	GLOBAL BROADCAST SERVICE (GBS)	18,171		18,171
060	0604222F	NUCLEAR WEAPONS SUPPORT	60,545		60,545
061	0604226F	B-1B	0		0
062	0604233F	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	8,066		8,066
063	0604240F	B-2 ADVANCED TECHNOLOGY BOMBER	0		0
064	0604270F	ELECTRONIC WARFARE DEVELOPMENT	89,966	3,900	93,866
		Joint Analysis Countermeasures Knowledge Assessment & Life-Cycle (JACKAL) Electronic Warfare (EW) Improvement Program		[3,900]	
065	0604280F	JOINT TACTICAL RADIO	631		631
066	0604281F	TACTICAL DATA NETWORKS ENTERPRISE	102,941		102,941
067	0604287F	PHYSICAL SECURITY EQUIPMENT	50		50
068	0604329F	SMALL DIAMETER BOMB (SDB)	153,505		153,505
069	0604421F	COUNTERSPACE SYSTEMS	40,276		40,276
070	0604425F	SPACE SITUATION AWARENESS SYSTEMS	426,525	-30,000	396,525
		Delay in Completion of Second Satellite		[-30,000]	
071	0604429F	AIRBORNE ELECTRONIC ATTACK	25,937		25,937
072	0604441F	SPACE BASED INFRARED SYSTEM (SBIRS) HIGH EMD	530,047		530,047
073	0604443F	THIRD GENERATION INFRARED SURVEILLANCE (3GIRS)	0		0
074	0604602F	ARMAMENT/ORDNANCE DEVELOPMENT	6,693		6,693
075	0604604F	SUBMUNITIONS	1,622		1,622

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
076	0604617F	AGILE COMBAT SUPPORT	37,987		37,987
077	0604706F	LIFE SUPPORT SYSTEMS	10,650		10,650
078	0604735F	COMBAT TRAINING RANGES	36,905		36,905
079	0604740F	INTEGRATED COMMAND & CONTROL APPLICATIONS (IC2A)	10		10
080	0604750F	INTELLIGENCE EQUIPMENT	1,364		1,364
081	0604800F	JOINT STRIKE FIGHTER (JSF)	883,773	403,426	1,287,199
		Competitive Engine		[242,500]	
		Transfer from RDAF 135		[160,926]	
082	0604851F	INTERCONTINENTAL BALLISTIC MISSILE	71,843		71,843
083	0604853F	EVOLVED EXPENDABLE LAUNCH VEHICLE PROGRAM (SPACE)	30,245	28,000	58,245
		Evaluate RL-10 Engines		[28,000]	
084	0605011F	RDT&E FOR AGING AIRCRAFT	0		0
085	0605221F	NEXT GENERATION AERIAL REFUELING AIRCRAFT	863,875		863,875
086	0605229F	CSAR HH-60 RECAPITALIZATION	12,584		12,584
087	0605277F	CSAR-X RDT&E	0		0
088	0605278F	HC/MC-130 RECAP RDT&E	15,536		15,536
089	0605452F	JOINT SIAP EXECUTIVE PROGRAM OFFICE	0		0
090	0207434F	LINK-16 SUPPORT AND SUSTAINMENT	0		0
091	0207451F	SINGLE INTEGRATED AIR PICTURE (SIAP)	1,832		1,832
092	0207701F	FULL COMBAT MISSION TRAINING	57,393		57,393
093	0305176F	COMBAT SURVIVOR EVADER LOCATOR	0		0
094	0401138F	JOINT CARGO AIRCRAFT (JCA)	26,407		26,407
095	0401318F	CV-22	18,270		18,270
096	0401845F	AIRBORNE SENIOR LEADER C3 (SLC3S)	15,826		15,826
		SUBTOTAL, SYSTEM DEVELOPMENT & DEMONSTRATION	**3,549,475**	**405,326**	**3,954,801**

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
RDT&E MANAGEMENT SUPPORT					
097	0604256F	THREAT SIMULATOR DEVELOPMENT	21,245		21,245
098	0604759F	MAJOR T&E INVESTMENT	61,587		61,587
099	0605101F	RAND PROJECT AIR FORCE	26,752		26,752
100	0605502F	SMALL BUSINESS INNOVATION RESEARCH	0		0
101	0605712F	INITIAL OPERATIONAL TEST & EVALUATION	20,665		20,665
102	0605807F	TEST AND EVALUATION SUPPORT	759,868		759,868
103	0605860F	ROCKET SYSTEMS LAUNCH PROGRAM (SPACE)	23,551		23,551
104	0605864F	SPACE TEST PROGRAM (STP)	47,623		47,623
105	0605976F	FACILITIES RESTORATION AND MODERNIZATION - TEST AND EVALUATION SUPPORT	46,327		46,327
106	0605978F	FACILITIES SUSTAINMENT - TEST AND EVALUATION SUPPORT	27,579		27,579
107	0606323F	MULTI-SERVICE SYSTEMS ENGINEERING INITIATIVE	18,901		18,901
108	0702806F	ACQUISITION AND MANAGEMENT SUPPORT	24,968		24,968
109	0804731F	GENERAL SKILL TRAINING	1,544		1,544
110	0909999F	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	0		0
111	1001004F	INTERNATIONAL ACTIVITIES	3,764		3,764
		SUBTOTAL, RDT&E MANAGEMENT SUPPORT	**1,084,374**		**1,084,374**
OPERATIONAL SYSTEMS DEVELOPMENT					
112	0603423F	GLOBAL POSITIONING SYSTEM III - OPERATIONAL CONTROL SEGMENT	0		0
113	0604263F	COMMON VERTICAL LIFT SUPPORT PLATFORM	0		0
114	0605018F	AIR FORCE INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (AF-IMHRS)	43,300		43,300
115	0605024F	ANTI-TAMPER TECHNOLOGY EXECUTIVE AGENCY	42,255		42,255
117	0101113F	B-52 SQUADRONS	146,096		146,096
118	0101122F	AIR-LAUNCHED CRUISE MISSILE (ALCM)	3,631		3,631
119	0101126F	B-1B SQUADRONS	33,234		33,234
120	0101127F	B-2 SQUADRONS	260,466		260,466

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
121	0101313F	STRAT WAR PLANNING SYSTEM - USSTRATCOM	28,441		28,441
122	0101314F	NIGHT FIST - USSTRATCOM	5,359		5,359
124	0102325F	ATMOSPHERIC EARLY WARNING SYSTEM	0		0
125	0102326F	REGION/SECTOR OPERATION CONTROL CENTER MODERNIZATION PROGRAM	23,732		23,732
126	0102823F	STRATEGIC AEROSPACE INTELLIGENCE SYSTEM ACTIVITIES	15		15
127	0203761F	WARFIGHTER RAPID ACQUISITION PROCESS (WRAP) RAPID TRANSITION FUND	10,580		10,580
128	0205219F	MQ-9 UAV	125,427		125,427
129	0207040F	MULTI-PLATFORM ELECTRONIC WARFARE EQUIPMENT	15,574		15,574
130	0207131F	A-10 SQUADRONS	5,661		5,661
131	0207133F	F-16 SQUADRONS	129,103		129,103
132	0207134F	F-15E SQUADRONS	222,677		222,677
133	0207136F	MANNED DESTRUCTIVE SUPPRESSION	12,937		12,937
134	0207138F	F-22A SQUADRONS	576,330		576,330
135	0207142F	F-35 SQUADRONS	217,561	-160,926	56,635
		Transfer to RDAF 081		[-160,926]	
136	0207161F	TACTICAL AIM MISSILES	6,040		6,040
137	0207163F	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	62,922		62,922
138	0207170F	JOINT HELMET MOUNTED CUEING SYSTEM (JHMCS)	2,407		2,407
139	0207224F	COMBAT RESCUE AND RECOVERY	944		944
140	0207227F	COMBAT RESCUE - PARARESCUE	2,921		2,921
141	0207247F	AF TENCAP	11,648		11,648
142	0207249F	PRECISION ATTACK SYSTEMS PROCUREMENT	3,017		3,017
143	0207253F	COMPASS CALL	20,652		20,652
144	0207268F	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	147,396		147,396
145	0207277F	ISR INNOVATIONS	0		0
146	0207325F	JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM)	20,000		20,000

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
147	0207410F	AIR & SPACE OPERATIONS CENTER (AOC)	93,102		93,102
148	0207412F	CONTROL AND REPORTING CENTER (CRC)	58,313		58,313
149	0207417F	AIRBORNE WARNING AND CONTROL SYSTEM (AWACS)	239,755		239,755
150	0207418F	TACTICAL AIRBORNE CONTROL SYSTEMS	0		0
151	0207423F	ADVANCED COMMUNICATIONS SYSTEMS	67,532		67,532
153	0207431F	COMBAT AIR INTELLIGENCE SYSTEM ACTIVITIES	3,310		3,310
154	0207438F	THEATER BATTLE MANAGEMENT (TBM) C4I	15,170		15,170
155	0207445F	FIGHTER TACTICAL DATA LINK	85,492		85,492
156	0207446F	BOMBER TACTICAL DATA LINK	0		0
157	0207448F	C2ISR TACTICAL DATA LINK	1,584		1,584
158	0207449F	COMMAND AND CONTROL (C2) CONSTELLATION	24,229		24,229
159	0207581F	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM (JSTARS)	168,917		168,917
160	0207590F	SEEK EAGLE	19,263		19,263
161	0207601F	USAF MODELING AND SIMULATION	21,638	3,700	25,338
		Battlefield Airman- Unfunded Requirement		[3,700]	
162	0207605F	WARGAMING AND SIMULATION CENTERS	6,020		6,020
163	0207697F	DISTRIBUTED TRAINING AND EXERCISES	2,863		2,863
164	0208006F	MISSION PLANNING SYSTEMS	79,112		79,112
165	0208021F	INFORMATION WARFARE SUPPORT	2,294		2,294
166	0208059F	CYBER COMMAND ACTIVITIES	1,117		1,117
173	0301400F	SPACE SUPERIORITY INTELLIGENCE	10,006		10,006
174	0302015F	E-4B NATIONAL AIRBORNE OPERATIONS CENTER (NAOC)	12,532		12,532
175	0303131F	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	78,784		78,784
176	0303140F	INFORMATION SYSTEMS SECURITY PROGRAM	140,017		140,017
177	0303141F	GLOBAL COMBAT SUPPORT SYSTEM	3,393		3,393
178	0303150F	GLOBAL COMMAND AND CONTROL SYSTEM	3,055	8,000	11,055

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		Defense Energy and Awareness Program (DEAP)		[8,000]	
179	0303158F	JOINT COMMAND AND CONTROL PROGRAM (JC2)	2,157		2,157
180	0303601F	MILSATCOM TERMINALS	186,582		186,582
182	0304260F	AIRBORNE SIGINT ENTERPRISE	149,268		149,268
185	0305099F	GLOBAL AIR TRAFFIC MANAGEMENT (GATM)	5,708		5,708
186	0305103F	CYBER SECURITY INITIATIVE	2,030		2,030
187	0305105F	DOD CYBER CRIME CENTER	279		279
188	0305110F	SATELLITE CONTROL NETWORK (SPACE)	21,667		21,667
189	0305111F	WEATHER SERVICE	32,373		32,373
190	0305114F	AIR TRAFFIC CONTROL, APPROACH, AND LANDING SYSTEM (ATCALS)	33,268		33,268
191	0305116F	AERIAL TARGETS	63,573		63,573
194	0305128F	SECURITY AND INVESTIGATIVE ACTIVITIES	469		469
196	0305146F	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES	40		40
198	0305164F	NAVSTAR GLOBAL POSITIONING SYSTEM (USER EQUIPMENT) (SPACE)	165,936		165,936
199	0305165F	NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE AND CONTROL SEGMENTS)	34,471		34,471
201	0305173F	SPACE AND MISSILE TEST AND EVALUATION CENTER	4,572		4,572
202	0305174F	SPACE WARFARE CENTER	2,929		2,929
203	0305182F	SPACELIFT RANGE SYSTEM (SPACE)	9,933		9,933
204	0305193F	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	1,254		1,254
205	0305205F	ENDURANCE UNMANNED AERIAL VEHICLES	0		0
206	0305206F	AIRBORNE RECONNAISSANCE SYSTEMS	168,963		168,963
207	0305207F	MANNED RECONNAISSANCE SYSTEMS	15,337		15,337
208	0305208F	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	93,398		93,398
209	0305219F	MQ-1 PREDATOR A UAV	28,913		28,913
210	0305220F	RQ-4 UAV	251,318		251,318
211	0305221F	NETWORK-CENTRIC COLLABORATIVE TARGETING	7,267		7,267

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
212	0305265F	GPS III SPACE SEGMENT	828,171		828,171
213	0305614F	JSPOC MISSION SYSTEM	132,706		132,706
214	0305887F	INTELLIGENCE SUPPORT TO INFORMATION WARFARE	5,512		5,512
215	0305913F	NUDET DETECTION SYSTEM (SPACE)	72,199		72,199
216	0305924F	NATIONAL SECURITY SPACE OFFICE	10,630		10,630
217	0305940F	SPACE SITUATION AWARENESS OPERATIONS	43,838		43,838
218	0307141F	INFORMATION OPERATIONS TECHNOLOGY INTEGRATION & TOOL DEVELOPMENT	21,912	2,800	24,712
		Cyber Transition Program		[2,800]	
219	0308699F	SHARED EARLY WARNING (SEW)	2,952		2,952
220	0401115F	C-130 AIRLIFT SQUADRON	113,107	-65,000	48,107
		Transfer to APAF 062		[-65,000]	
221	0401119F	C-5 AIRLIFT SQUADRONS (IF)	58,990		58,990
222	0401130F	C-17 AIRCRAFT (IF)	177,212		177,212
223	0401132F	C-130J PROGRAM	26,770		26,770
224	0401134F	LARGE AIRCRAFT IR COUNTERMEASURES (LAIRCM)	17,227		17,227
225	0401218F	KC-135S	20,453		20,453
226	0401219F	KC-10S	56,669		56,669
227	0401314F	OPERATIONAL SUPPORT AIRLIFT	4,988		4,988
228	0401315F	C-STOL AIRCRAFT	1,283		1,283
229	0401839F	AIR MOBILITY TACTICAL DATA LINK	0		0
230	0408011F	SPECIAL TACTICS / COMBAT CONTROL	7,345		7,345
231	0702207F	DEPOT MAINTENANCE (NON-IF)	1,514		1,514
232	0702976F	FACILITIES RESTORATION & MODERNIZATION - LOGISTICS	0		0
233	0708012F	LOGISTICS SUPPORT ACTIVITIES	0		0
234	0708610F	LOGISTICS INFORMATION TECHNOLOGY (LOGIT)	227,614		227,614
235	0708611F	SUPPORT SYSTEMS DEVELOPMENT	6,141	3,000	9,141

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		Micro-Grid Energy Storage Utilizing a Deployable Zinc-Bromide Flow Battery		[3,000]	
236	0804743F	OTHER FLIGHT TRAINING	667		667
237	0804757F	JOINT NATIONAL TRAINING CENTER	9		9
238	0804772F	TRAINING DEVELOPMENTS	0		0
239	0808716F	OTHER PERSONNEL ACTIVITIES	116		116
240	0901202F	JOINT PERSONNEL RECOVERY AGENCY	6,107		6,107
241	0901212F	SERVICE-WIDE SUPPORT (NOT OTHERWISE ACCOUNTED FOR)	0		0
242	0901218F	CIVILIAN COMPENSATION PROGRAM	7,811		7,811
243	0901220F	PERSONNEL ADMINISTRATION	11,179		11,179
244	0901538F	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT	49,816		49,816
245	9999999999	CLASSIFIED PROGRAMS	12,406,781		12,406,781
		SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**18,919,248**	**-208,426**	**18,710,822**
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, AF	**27,247,302**	**22,600**	**27,269,902**

Items of Special Interest

Conversion of excess ballistic missiles for space transportation uses

Section 205 of the Commercial Space Act of 1998 (Public Law 105–303) requires a certification by a U.S. Government agency to the Congress at least 30 days before such agency converts an excess ballistic missile for use as a space transportation vehicle if the action: "(a) would result in cost savings to the federal government when compared to the cost of acquiring space transportation services from United States commercial providers; (b) meets all mission requirements of the agency, including performance, schedule, and risk requirements; (c) is consistent with international obligations of the United States; and (d) is approved by the Secretary of Defense or his designee."

In a recent Government Accountability Office decision, "In the Matter of Space Exploration Technologies Corporation," File B–402186, February 1, 2010, the Air Force testified that it interprets the term "conversion" to "occur when the excess [intercontinental ballistic missile] assets are removed from their storage place and united with commercial components something that typically does not occur until launch is imminent and long after the contract or delivery order for the applicable launch service has been awarded."

Given that the purpose of Public Law 105–303 is to promote the United States commercial space industry, the committee is troubled by the Air Force interpretation of the term "conversion" and believes that the certification should be provided to Congress with sufficient time to review and take action, if necessary. The committee recommends that an agency considering conversion should provide a certification concurrent with awarding a contract or delivery order for space transportation services. Moreover, the certification letter should provide sufficient financial detail to demonstrate that the action would result in cost savings to the United States. The committee notes that while the original development and procurement costs of excess ballistic missile assets are sunk costs, the costs to refurbish or modify excess assets for space launch or suborbital use are current costs and should be paid for by the agency proposing to use the assets.

Cyber Boot Camp

The budget request contained $117.3 million in PE 62788F for work to develop better command, control, and communications systems within the Air Force, including funds to support the Advanced Course in Engineering (ACE) Cyber Boot Camp summer program for the Air Force Reserve Officer Training Corps (ROTC).

The committee is encouraged by efforts at the Air Force Research Laboratory Rome Research Site (AFRL/RRS) to develop educational curriculum to train the future workforce of cyber operations experts. The mission of ACE is to develop ROTC cadets into cyber officers. ACE is a 10-week summer program consisting of classes, on-the-job mentoring, and officer development that targets the top students in computer-related disciplines and teaches them to become original thinkers, problem solvers, and technical leaders. ACE is the only cyber education offered by the Department of Defense for ROTC cadets. The committee recognizes that this program is vital to ensuring a robust information technology workforce that is capa-

ble of handling current and future cyber threats to our systems. The committee believes ACE Cyber Boot Camp should be expanded beyond the Air Force to include ROTC cadets from other military services.

The committee recommends $118.3 million, an increase of $1.0 million, in PE 62788F for AFRL/RRS to support the expansion of the ACE Cyber Boot curriculum to other service ROTC participants, and to provide for additional 10-week courses to accommodate this expansion.

Defense applications of commercial satellites

The committee is aware of numerous opportunities for hosting defense payloads on commercial satellites. For example, the committee understands that it may be possible to place weather data sensors on a commercial satellite platform that would augment or replace dedicated weather satellite systems. The committee directs the Secretary of Defense, in consultation with the Secretary of the Air Force, to conduct a study of the options for hosting defense payloads on commercial satellites. The committee expects the study to identify feasible options that offer potential savings and the specific actions required to take advantage of these opportunities. The committee further directs the Secretary to submit a report on the study to the congressional defense committees by March 1, 2011.

Evolved Expendable Launch Vehicle common upper stage engine

The budget request contained $30.2 million in PE 64853 for Evolved Expendable Launch Vehicle program, but included no funds for research and development to achieve a common upper stage between the Atlas and Delta launch vehicles. In fiscal year 2010, Congress provided $20.0 million for this purpose. The committee supports continuing work to modify Delta IV RL–10 upper stage engines to the Atlas V RL–10 configuration to enable efficient use of the existing RL–10 inventory.

The committee recommends $58.2 million, an increase of $28.0 million, for research and development of a common upper stage engine for the Delta and Atlas launch vehicles.

F–35 aircraft

The budget request contained $2.4 billion in PEs 64800F, 64800N, and 64800M for development of the F–35 aircraft, but contained no funds for development of a competitive F–35 propulsion system. The budget request also contained $7.7 billion in Aircraft Procurement, Air Force and Aircraft Procurement, Navy for procurement of 22 F–35As, 13 F–35Bs, and 7 F–35Cs.

The competitive F–35 propulsion system program is developing the F136 engine, which would provide a competitive alternative to the currently-planned F135 engine. For the past four years, the committee recommended increases for the F–35 competitive propulsion system, and notes that in all cases, funds have been appropriated by Congress for this purpose. Despite section 213 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181), which requires the Secretary of Defense to obligate and expend sufficient annual amounts for the continued development and procurement of a competitive propulsion system for the F–35, the committee is disappointed that the Department of Defense

(DOD) has, for the fifth consecutive year, chosen not to comply with both the spirit and intent of this law by opting not to include funds for this purpose in the budget request.

In the committee report accompanying the National Defense Authorization Act for Fiscal Year 2010 (H. Rept. 111–166), the committee noted cost increases in the F135 development program, as well as cost increases for the procurement of F135 engines between December 2005 and December 2008. A March 2010 report on the Joint Strike Fighter by the Government Accountability Office (GAO) notes that F135 engine development cost is now estimated to cost $7.3 billion, a 50 percent increase over the original contract award. In its report, GAO also notes that for the fiscal year 2009 F135 engine contract, the negotiated price for the F–35B engine and lift fan was 21 percent higher than the budget estimate, and the negotiated unit cost for the F–35A engine was 42 percent higher than budgeted. Over the past year, as a result of these cost increases in fiscal year 2009, the Under Secretary of Defense for Acquisition, Technology, and Logistics directed that a Joint Assessment Team (JAT) review the F135 cost structure, and the JAT concluded that engine contractor improvement plans were credible but challenging, and would require additional investment by the contractor for cost reduction initiatives.

On February 23, 2010, the Deputy Secretary of Defense submitted to the committee an update of the 2007 DOD "Joint Strike Fighter Alternate Engine Acquisition and Independent Coast Analysis" for the competitive engine program which noted that an investment of $2.9 billion over six years in additional cost would be required to finish F136 engine development and to conduct directed buys to prepare the F136 for competitive procurement of F–35 engines in 2017. This report also noted that long-term costs for either a one-engine or two-engine competitive acquisition strategy are the same, on a net present value basis.

Given the F135 development and procurement cost increases and that long-term F–35 engine costs would be the same for a competitive F–35 engine acquisition strategy, the committee is puzzled by the Department's decisions over the past five years to not include an F–35 competitive propulsion system program in its budget requests. The committee remains unwavering in its belief that the non-financial factors of a two-engine competitive program, such as better engine performance, improved contractor responsiveness, a more robust industrial base, increased engine reliability and improved operational readiness, strongly favor continuing the F–35 competitive propulsion system program. Therefore, the committee recommends a total increase of $485.0 million for the competitive engine program in PEs 64800F, 64800N, and 64800M as noted in the funding tables elsewhere in this report.

Over the past year, the F–35 Joint Program Office (JPO) and F–35 contractor failed to meet promised expectations with regard to cost and schedule performance. As a result, in addition to the JAT, the Department of Defense conducted two other reviews of the F–35 program which included a 2009 update to the 2008 Joint Estimating Team (JET), known as JET 2, and chartered an independent manufacturing review team (IMRT). The JET 2 was tasked to conduct an independent cost and schedule estimate of the development and production program, while the IMRT reviewed

production capacity and risk. The JET 2 concluded that the F–35 development program would take 30 months longer and cost some $3.0 billion more, and the IMRT concluded that the contractor's planned production ramp rates were high risk and not achievable within the contractor's planned timeframe. To reduce development and production risk, the Department of Defense proposes to procure one additional F–35C developmental test aircraft; stand-up an additional software simulation facility; utilize three operational F–35s for developmental test purposes; adjust the production profile in line with the IMRT recommendations and reduce planned production in the Future Years Defense Program by 122 aircraft; and increase amounts budgeted for F–35 development and production. Together, these actions are projected to delay the completion of F–35 development by 13 months compared to last year's plan, and cost $2.8 billion more. In accordance with section 2433 of title 10, United States Code, the Secretary of the Air Force informed the committee on March 25, 2010, that the F–35 program will exceed unit cost thresholds by more than 50 percent compared to the original baseline estimate.

On March 11, 2010, in testimony before the Senate Committee on Armed Services, the Under Secretary of Defense for Acquisition, Technology, and Logistics described the F–35 program as having "unprecedented concurrency" of development, test, and production activities. On March 24, 2010, at a hearing held jointly by the Subcommittee on Air and Land Forces and the Subcommittee on Seapower and Expeditionary Forces, the Office of the Secretary of Defense's Director of Operational Test and Evaluation testified that "the primary issues with the Joint Strike Fighter program have been late delivery of test aircraft and the failure to adjust to the reality by building and resourcing realistic system development and test plans, as well as plans for producing and delivering aircraft." Additionally, on March 24, 2010, GAO's Director of Acquisition and Sourcing Management testified to the Subcommittee on Air and Land Forces and the Subcommittee on Seapower and Expeditionary Forces that the "DOD intends to procure up to 307 aircraft at a cost of $58.2 billion before completing developmental flight testing by mid-fiscal year 2015." The committee notes that, under current plans in the spring of 2015, the Department will have requested a total of 550 aircraft, over 22 percent of the planned procurement of 2,443 F–35s, before developmental testing is complete. The committee also notes that, notwithstanding the JAT, JET 2, and IMRT findings and continued unprecedented research and development and procurement concurrency, the request for 43 total F–35 aircraft for fiscal year 2011 is the same as projected in fiscal year 2009 for fiscal year 2011. In its testimony on March 24, 2010, GAO also noted that "with most of development testing still ahead, the risk and impact from required design changes are significant," and may require "alterations to the production process, changes to the supply base and costly retrofitting of aircraft already produced and fielded." Consequently, the committee remains concerned that despite the Department's recent reduction of 122 aircraft in the Future Years Defense Program, the F–35 production ramp rate may still too high and the Department should consider further reductions until developmental testing is complete.

For fiscal year 2011, the committee recommends authorization of the budget request for 42 aircraft, subject to the Department's completion of certain milestones planned by the Department for calendar year 2010. Accordingly, the committee recommends a provision (sec. 141) which would require the Under Secretary of Defense for Acquisition, Technology, and Logistics and the Director of Operational Test and Evaluation to certify, not later than January 15, 2011, that certain milestones have been completed before an amount necessary for the procurement of more than 30 F–35 aircraft would be obligated or expended.

Global Hawk unmanned aerial vehicle and Broad Area Maritime Surveillance system commonality

The Air Force's Global Hawk unmanned aerial system (UAS) and the Navy's Broad Area Maritime Surveillance (BAMS) system were planned to achieve maximum system commonality and interoperability.

The committee is concerned that differing, evolving service unique requirements, coupled with Global Hawk UAS vanishing vendor issues are resulting in a divergence in each service's basic goal of maximum system commonality and interoperability, particularly with regard to the communications systems.

The committee directs that the Under Secretary of Defense for Acquisition, Technology, and Logistics to certify and provide written notification of compliance to the congressional defense committees by March 31, 2011, that he has reviewed the communications requirements and acquisition strategy for both the Global Hawk UAS and BAMS systems programs, that the requirements of each service's communications systems have been validated, and the acquisition strategy being executed for each system achieves the greatest possible commonality and represents the most cost effective option for each program.

Metals Affordability Initiative

The budget request contained $33.4 million in PE 63112F for advanced materials for weapon systems.

Congress has supported the Metals Affordability Initiative (MAI) as a peer review process to provide science and technology funding for promising aerospace projects in the Air Force advanced materials program with the objective of improving the strength and durability of materials available to the warfighter, as well as reduce costs. The committee continues to support government-industry collaboration provided through MAI. It provides significant improvements in the manufacturing of specialty metals for aerospace applications for the government and aerospace industry, and provides improved affordability of aerospace metals. Further, the committee continues to encourage the Air Force to budget for this highly successful initiative in future years.

The committee recommends an increase of $10.0 million in PE 63112F for the Metals Affordability Initiative.

National Polar-Orbiting Operational Environmental Satellite System

The budget request contained $325.5 million in PE 35178F for the National Polar-orbiting Operational Environmental Satellite System (NPOESS).

This tri-agency program, involving the Department of Defense, the Department of Commerce, and the National Aeronautics and Space Administration, was established in 1994 to combine the weather satellite programs of the National Oceanic and Atmospheric Administration (NOAA) and the Air Force. In the committee report (H. Rept. 111–166) accompanying the National Defense Authorization Act for Fiscal Year 2010, the committee expressed concern about the significant cost, schedule and management challenges facing the program.

Section 913 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) required the President to develop a strategy for the management and funding of the NPOESS program and an implementation plan to execute this strategy. The section also limited the expenditure of funds in fiscal year 2010 until reports on the strategy and the plan were submitted to Congress.

On February 1, 2010, the Executive Office of the President announced its intention to restructure the NPOESS program by terminating the joint procurement of weather satellites and assigning responsibility for each of the three planned orbits to the agency holding the majority of the interest in that orbit. The Department of Commerce will populate the afternoon orbit and the Department of Defense will populate the early morning orbit. The U.S. Government will continue to rely on the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) to provide weather data from the mid-morning orbit period.

On March 12, 2010, the Director of the Office of Management and the Budget and the Director of the Office of Science and Technology Policy submitted a report on the strategy and implementation plan required by section 913 of Public Law 111–84. The report explained that the Department of Defense would identify the path forward to accomplishing the early morning orbit mission by reviewing its requirements consistent with its acquisition regulations, making a Material Development Decision, and then performing an Analysis of Alternatives. The committee does not expect this process to be completed in less than a year.

The report also stated that the Department of Defense budget request for fiscal year 2011 "will remain unchanged to allow work to continue on the satellite components as well as to transition the afternoon acquisition efforts to NOAA." The committee has received no information from the Department of Defense on how it intends to support continued work on satellite components in fiscal year 2011 or how current work related to the afternoon orbit will be transitioned to NOAA.

The committee does not support additional funding, beyond that currently available in fiscal year 2010, for the acquisition of a satellite for the afternoon orbit until a transition plan has been prepared and until the Department of Defense has completed its process for determining the path forward for populating the morning orbit.

The committee recommends $25.5 million, a decrease of $300.0 million, in PE 35178F for NPOESS.

Next-generation military satellite communications technology development

The budget request included no funds in PE 64436F for next-generation military satellite communications technology development. In the conference report (H. Rept. 111–288) accompanying the National Defense Authorization Act for Fiscal Year 2010, Congress authorized creation of this program element to carry out technology development efforts, in part to fill gaps left by the cancellation of the transformational satellite communications program. The committee considers it a priority to continue developing sufficiently mature communication technologies that could be used on future blocks of current communication satellites or, eventually, on next-generation communication satellites to minimize the technical, cost, and schedule risk. The committee is especially interested in risk reduction efforts that could have applications on future satellites, and in military-unique radiation hardening requirements and techniques with a focus on reducing the cost, weight, and complexity of current technologies.

The committee recommends an increase of $50.0 million in PE 64436F for next-generation military satellite communications technology development.

Non-volatile hardened memory

The committee recognizes that non-volatile, radiation-hardened memory provides a dedicated, light-weight storage capacity with important defense applications. The committee therefore directs the Secretary of the Air Force to prepare a technology development and investment plan to ensure that the U.S. Government continues along a near-term path to develop and produce eight megabyte or greater non-volatile, radiation-hardened memory chips. The committee further directs the Secretary to deliver this plan to the congressional defense committees by March 1, 2011.

Operationally Responsive Space

The budget request contained $94.0 million in PE 64857F for Operationally Responsive Space (ORS). However, the budget request did not include sufficient funding to accelerate the development of critical ORS infrastructure, and to acquire enabling technologies.

The John Warner National Defense Authorization Act for Fiscal Year 2007 (Public Law 109–364) established the ORS Office to respond to the needs of the joint force commander and to build the enabling infrastructure to deliver space capabilities in operationally relevant timelines. The committee commends the progress made thus far on the ORS–1 satellite, which has been a warfighter priority, and the development of an open architecture with a plug-in-play bus, modular payloads, and standard interfaces. In this next stage, the committee recommends increased funding to further develop such activities. The committee also supports accelerating the development of critical infrastructure to expand user access to ORS capabilities and data. These efforts would expand ground and communications segments providing data to multiple operational

commands and users. This work would also accelerate development of a space vehicle that would accommodate multiple payloads on shorter timelines.

The committee recommends $134.0 million, an increase of $40.0 million, in PE 64857F to acquire additional ORS satellites to meet commanders' urgent needs, support enabling technologies, and to further develop and procure an open architecture with a plug-in-play bus, modular payloads, and standard interfaces.

Space Based Space Surveillance

The budget request contained $185.9 million in PE 64425F for the Space Based Space Surveillance (SBSS) project.

The SBSS project is a critical priority for space situational awareness (SSA) and is structured into two acquisition efforts: a Block 10 system and follow-on systems. Launch of the Block 10 system has been delayed several times and is currently scheduled for July 2010. Delays in the Block 10 satellite launch have affected the schedule for the follow on product development and delivery, reducing the funding requirement for SBSS in fiscal year 2011.

SBSS will support SSA by providing timely, actionable data for detecting, tracking and identifying objects in space in order to execute global space operations, provide threat assessment and warning, conduct operational-level space campaign planning and strategy, and maintain the space operating picture. After launch, the Block 10 system is expected to operate until January 2016. The committee understands that the Air Force intends to decelerate acquisition of the follow-on SBSS system to incorporate lessons learned from initial operation of the Block 10 system.

The committee recommends $155.9 million, a decrease of $30.0 million, in PE 64425F for the Space Based Space Surveillance project.

Star tracker technology

The committee is concerned with the decline and potential loss of domestically produced, survivable, moderate accuracy star trackers for defense and national security satellite programs. The committee believes that star trackers are a foundational technology for enabling both military and civilian satellites to fulfill their missions. The committee understands that star trackers should be survivable against current and near-term threats, including laser illumination and exo-atmospheric nuclear detonations.

The committee directs the Secretary of the Air Force to prepare a technology development and investment plan to ensure that the U.S. Government retains the ability to produce moderate accuracy, survivable star trackers. The committee further directs the Secretary of the Air Force to submit this plan to the congressional defense committees by March 1, 2011.

Technology Research and Innovation Outreach for Space

The budget request contained $111.9 million in PE 62601F for space technology, but contained no funds for the Technology Research and Innovation Outreach for Space (TRIOS) project.

The TRIOS project is designed to expand the number of private sector companies, universities, and government entities participating in the nation's small satellite space sector. This expansion

should directly benefit Department of Defense space organizations at Kirtland Air Force Base, the Air Force Research Lab Space Vehicles and Directed Energy Directorates, the Operationally Responsive Space Office, and the Space Development and Test Wing, by providing ready access to innovative vendors and well-qualified scientists, engineers, and technicians. This will expedite the development and launch of the new small, lower-cost, responsive space systems required to support the Department's numerous and rapidly changing warfighter missions around the world.

The committee recommends an increase of $3.0 million in PE 62601F for the Technology Research and Innovation Outreach for Space project.

DEFENSE-WIDE RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

Overview

The budget request contained $20.7 billion for Defense-Wide research, development, test, and evaluation (RDT&E). The committee recommends $20.7 billion, an increase of $51.5 million to the budget request.

The committee recommendations for the fiscal year 2011 research, development, test, and evaluation, Defense-Wide are identified in the table below. Major changes to the Defense-Wide program are discussed following the table.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
RESEARCH, DEVELOPMENT, TEST & EVAL, DW					
BASIC RESEARCH					
001	0601000BR	DTRA BASIC RESEARCH INITIATIVE	47,412	5,000	52,412
		University Strategic Partnerships		[5,000]	
002	0601101E	DEFENSE RESEARCH SCIENCES	328,195	-44,720	283,475
		Ant-Based Cyber Defense		[1,080]	
		Computer Science Futures		[1,000]	
		DARPA Reduction		[-50,000]	
		Vaccine Stabilization Initiative		[3,200]	
003	0601111D8Z	GOVERNMENT/INDUSTRY COSPONSORSHIP OF UNIVERSITY RESEARCH	0		0
004	0601114D8Z	DEFENSE EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH	0		0
005	0601120D8Z	NATIONAL DEFENSE EDUCATION PROGRAM	109,911	5,233	115,144
		Energy and Power Career Development STEM Initiative		[4,000]	
		STEM Outreach Education		[1,233]	
006	0601384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	49,508	5,500	55,008
		Synchrotron Beamline and Experimental Station		[5,500]	
		SUBTOTAL, BASIC RESEARCH	**535,026**	**-28,987**	**506,039**
APPLIED RESEARCH					
007	0602000D8Z	JOINT MUNITIONS TECHNOLOGY	22,448		22,448
008	0602228D8Z	HISTORICALLY BLACK COLLEGES AND UNIVERSITIES (HBCU) SCIENCE	15,067	12,500	27,567

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
		Historically Black Colleges and Universities and Minority Institutions		[5,000]	
		Morehouse College, John H. Hopps Defense Research Scholars Program		[3,000]	
		Nanoscience and Biotechnology Laboratories and Research Program		[2,000]	
		Thurgood Marshall College Fund		[2,500]	
009	0602234D8Z	LINCOLN LABORATORY RESEARCH PROGRAM	32,830		32,830
010	0602303E	INFORMATION & COMMUNICATIONS TECHNOLOGY	281,262		281,262
011	0602304E	COGNITIVE COMPUTING SYSTEMS	90,143	-21,000	69,143
		Cognitive Computing		[-21,000]	
012	0602305E	MACHINE INTELLIGENCE	44,682		44,682
013	0602383E	BIOLOGICAL WARFARE DEFENSE	32,692		32,692
014	0602384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	169,287	8,700	177,987
		Therapeutic Drug Against Multiple Bio-Threat Agents		[2,500]	
		Viral WMD: Protection and Treatment for the Warfighter		[6,200]	
015	0602663D8Z	JOINT DATA MANAGEMENT ADVANCED DEVELOPMENT	3,261		3,261
016	0602668D8Z	CYBER SECURITY RESEARCH	10,000		10,000
017	0602670D8Z	HUMAN, SOCIAL AND CULTURE BEHAVIOR MODELING (HSCB) APPLIED RESEARCH	9,499		9,499
018	0602702E	TACTICAL TECHNOLOGY	224,378		224,378
019	0602715E	MATERIALS AND BIOLOGICAL TECHNOLOGY	312,586	-5,000	307,586
		DARPA Reduction		[-5,000]	
020	0602716E	ELECTRONICS TECHNOLOGY	286,936	-15,000	271,936
		DARPA Reduction		[-15,000]	
021	0602718BR	WEAPONS OF MASS DESTRUCTION DEFEAT TECHNOLOGIES	212,742		212,742
022	1160401BB	SPECIAL OPERATIONS TECHNOLOGY DEVELOPMENT	26,545	5,000	31,545
		Special Operations Technology Development		[5,000]	

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
023	1160407BB	SOF MEDICAL TECHNOLOGY DEVELOPMENT	0		0
		SUBTOTAL, APPLIED RESEARCH	**1,774,358**	**-14,800**	**1,759,558**
ADVANCED TECHNOLOGY DEVELOPMENT (ATD)					
024	0603000D8Z	JOINT MUNITIONS ADVANCED TECHNOLOGY	20,556		20,556
025	0603121D8Z	SO/LIC ADVANCED DEVELOPMENT	44,423		44,423
026	0603122D8Z	COMBATING TERRORISM TECHNOLOGY SUPPORT	85,299	15,255	100,554
		Digital Media Study		[2,500]	
		Early Responders Distance Learning Center (ERDLC)		[1,255]	
		Explosive Loading Laboratory Testing Program for Forward Force Protection		[3,000]	
		Multi-State Combined Injury Consortium		[5,000]	
		Risk Assessment and Resource Allocation in Combating Terrorism		[3,500]	
027	0603160BR	COUNTERPROLIFERATION INITIATIVES - PROLIFERATION PREVENTION AND DEFEAT	295,163		295,163
028	0603175C	BALLISTIC MISSILE DEFENSE TECHNOLOGY	132,220		132,220
029	0603200D8Z	JOINT ADVANCED CONCEPTS	6,808		6,808
030	0603225D8Z	JOINT DOD-DOE MUNITIONS TECHNOLOGY DEVELOPMENT	22,700		22,700
031	0603264S	AGILE TRANSPORTATION FOR THE 21ST CENTURY (AT21) - THEATER CAPABILITY	750		750
032	0603286E	ADVANCED AEROSPACE SYSTEMS	303,078	-31,000	272,078
		DARPA Reduction		[-31,000]	
033	0603287E	SPACE PROGRAMS AND TECHNOLOGY	98,130	-2,000	96,130
		DARPA Reduction		[-2,000]	
034	0603384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM - ADVANCED DEVELOPMENT	177,113	3,000	180,113
		Integrated Chemical and Biological Detection System Technology Demonstration		[3,000]	
035	0603618D8Z	JOINT ELECTRONIC ADVANCED TECHNOLOGY	8,386		8,386
036	0603648D8Z	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS	206,917		206,917

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
037	0603662D8Z	NETWORKED COMMUNICATIONS CAPABILITIES	30,035		30,035
038	0603663D8Z	JOINT DATA MANAGEMENT RESEARCH	6,289		6,289
039	0603665D8Z	BIOMETRICS SCIENCE AND TECHNOLOGY	11,416		11,416
040	0603668D8Z	CYBER SECURITY ADVANCED RESEARCH	10,000		10,000
041	0603670D8Z	HUMAN, SOCIAL AND CULTURE BEHAVIOR MODELING (HSCB) ADVANCED DEVELOP	11,510		11,510
042	0603680D8Z	DEFENSE-WIDE MANUFACTURING SCIENCE AND TECHNOLOGY PROGRAM	18,916		18,916
043	0603711D8Z	JOINT ROBOTICS PROGRAM/AUTONOMOUS SYSTEMS	9,943		9,943
044	0603712S	GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS	20,542	7,000	27,542
		Next Generation Manufacturing Technologies Initiative		[4,000]	
		Woody Biomass Conversion to Jet Fuel		[3,000]	
045	0603713S	DEPLOYMENT AND DISTRIBUTION ENTERPRISE TECHNOLOGY	29,109		29,109
046	0603716D8Z	STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM	68,021		68,021
047	0603720S	MICROELECTRONICS TECHNOLOGY DEVELOPMENT AND SUPPORT	26,878	2,000	28,878
		Feature Size Yield Enhancement		[2,000]	
048	0603727D8Z	JOINT WARFIGHTING PROGRAM	10,966		10,966
049	0603739E	ADVANCED ELECTRONICS TECHNOLOGIES	197,098		197,098
050	0603745D8Z	SYNTHETIC APERTURE RADAR (SAR) COHERENT CHANGE DETECTION (CDD)	0		0
051	0603750D8Z	ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS	0		0
052	0603755D8Z	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM	200,986		200,986
053	0603760E	COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS	219,809	-2,000	217,809
		DARPA Reduction		[-2,000]	
054	0603765E	CLASSIFIED DARPA PROGRAMS	167,008	-15,000	152,008
		DARPA Reduction		[-15,000]	
055	0603766E	NETWORK-CENTRIC WARFARE TECHNOLOGY	234,985	-15,000	219,985
		DARPA Reduction		[-15,000]	

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
056	0603767E	SENSOR TECHNOLOGY	205,032	-5,000	200,032
		DARPA Reduction		[-5,000]	
057	0603768E	GUIDANCE TECHNOLOGY	0		0
058	0603769SE	DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT	13,986		13,986
059	0603781D8Z	SOFTWARE ENGINEERING INSTITUTE	30,910		30,910
060	0603805S	DUAL USE TECHNOLOGY	0		0
061	0603826D8Z	QUICK REACTION SPECIAL PROJECTS	78,244	10,000	88,244
		Counter-Ideology Program		[10,000]	
061A	0603XXXD8Z	DEPARTMENT OF DEFENSE RAPID INNOVATION PROGRAM	0		0
062	0603828D8Z	JOINT EXPERIMENTATION	111,946		111,946
063	0603832D8Z	DOD MODELING AND SIMULATION MANAGEMENT OFFICE	38,140		38,140
064	0603901C	DIRECTED ENERGY RESEARCH	98,688	50,000	148,688
		Program Increase		[50,000]	
065	0603941D8Z	TEST & EVALUATION SCIENCE & TECHNOLOGY	97,642	2,000	99,642
		Center for Defense Systems Research (CDSR)		[2,000]	
066	0603942D8Z	TECHNOLOGY TRANSFER	23,310		23,310
067	1160402BB	SPECIAL OPERATIONS ADVANCED TECHNOLOGY DEVELOPMENT	30,806	4,600	35,406
		Partnership for Defense Innovation Wi-Fi Laboratory Testing and Assessment Center		[4,600]	
068	1160422BB	AVIATION ENGINEERING ANALYSIS	4,234		4,234
069	1160472BB	SOF INFORMATION AND BROADCAST SYSTEMS ADVANCED TECHNOLOGY	4,942		4,942
		SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT (ATD)	**3,412,934**	**23,855**	**3,436,789**
ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES					
070	0603161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E ADC&P	32,132		32,132
071	0603527D8Z	RETRACT LARCH	21,592		21,592
072	0603709D8Z	JOINT ROBOTICS PROGRAM	9,878		9,878

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073	0603714D8Z	ADVANCED SENSOR APPLICATIONS PROGRAM	18,060		18,060
074	0603851D8Z	ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM	30,419	15,000	45,419
		Environmental Security Technical Certification Program		[10,000]	
		Pilot Program on Collaborative Energy Security		[5,000]	
075	0603881C	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT	436,482		436,482
076	0603882C	BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT	1,346,181		1,346,181
077	0603883C	BALLISTIC MISSILE DEFENSE BOOST DEFENSE SEGMENT	0		0
078	0603884BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	277,062		277,062
079	0603884C	BALLISTIC MISSILE DEFENSE SENSORS	454,859		454,859
080	0603886C	BALLISTIC MISSILE DEFENSE SYSTEM INTERCEPTOR	0		0
081	0603888C	BALLISTIC MISSILE DEFENSE TEST & TARGETS	1,113,425		1,113,425
082	0603890C	BMD ENABLING PROGRAMS	402,769		402,769
083	0603891C	SPECIAL PROGRAMS - MDA	270,189	-25,000	245,189
		Program Reduction		[-25,000]	
084	0603892C	AEGIS BMD	1,467,278		1,467,278
085	0603893C	SPACE TRACKING & SURVEILLANCE SYSTEM	112,678		112,678
086	0603894C	MULTIPLE KILL VEHICLE	0		0
087	0603895C	BALLISTIC MISSILE DEFENSE SYSTEM SPACE PROGRAMS	10,942		10,942
088	0603896C	BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT AND	342,625		342,625
089	0603897C	BALLISTIC MISSILE DEFENSE HERCULES	0		0
090	0603898C	BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT	68,726		68,726
091	0603904C	MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	86,198		86,198
092	0603906C	REGARDING TRENCH	7,529		7,529
093	0603907C	SEA BASED X-BAND RADAR (SBX)	153,056		153,056
094	0603908C	BMD EUROPEAN INTERCEPTOR SITE	0		0
095	0603909C	BMD EUROPEAN MIDCOURSE RADAR	0		0

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(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
096	0603911C	BMD EUROPEAN CAPABILITY	0		0
097	0603912C	BMD EUROPEAN COMMUNICATIONS SUPPORT	0		0
098	0603913C	ISRAELI COOPERATIVE PROGRAMS	121,735	88,000	209,735
		Arrow 2/ASIP		[42,000]	
		Arrow 3		[8,000]	
		David's Sling Weapon System		[38,000]	
099	0603920D8Z	HUMANITARIAN DEMINING	14,735		14,735
100	0603923D8Z	COALITION WARFARE	13,786		13,786
101	0604016D8Z	DEPARTMENT OF DEFENSE CORROSION PROGRAM	4,802		4,802
102	0604400D8Z	UNMANNED AIRCRAFT SYSTEM (UAS) COMMON DEVELOPMENT	49,292		49,292
103	0604648D8Z	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS	0		0
104	0604670D8Z	HUMAN, SOCIAL AND CULTURE BEHAVIOR MODELING (HSCB) RESEARCH AND ENGIN	7,459		7,459
105	0604787D8Z	JOINT SYSTEMS INTEGRATION COMMAND (JSIC)	19,413		19,413
106	0604828D8Z	JOINT FIRES INTEGRATION AND INTEROPERABILITY TEAM	16,637		16,637
107	0604880C	LAND-BASED SM-3 (LBSM3)	281,378		281,378
108	0604881C	AEGIS SM-3 BLOCK IIA CO-DEVELOPMENT	318,800		318,800
109	0604883C	PRECISION TRACKING SPACE SYSTEM RDT&E	66,969		66,969
110	0604884C	AIRBORNE INFRARED (ABIR)	111,671		111,671
111	0605017D8Z	REDUCTION OF TOTAL OWNERSHIP COST	20,310		20,310
112	0303191D8Z	JOINT ELECTROMAGNETIC TECHNOLOGY (JET) PROGRAM	4,027		4,027
		SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES	**7,713,094**	**78,000**	**7,791,094**
SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD)					
113	0604051D8Z	DEFENSE ACQUISITION CHALLENGE PROGRAM (DACP)	24,344		24,344
114	0604161D8Z	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E SDD	7,973		7,973
115	0604165D8Z	PROMPT GLOBAL STRIKE CAPABILITY DEVELOPMENT	239,861		239,861

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
116	0604384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	407,162		407,162
117	0604709D8Z	JOINT ROBOTICS PROGRAM	4,155		4,155
118	0604764K	ADVANCED IT SERVICES JOINT PROGRAM OFFICE (AITS-JPO)	49,364		49,364
119	0604771D8Z	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)	20,954		20,954
120	0605000BR	WEAPONS OF MASS DESTRUCTION DEFEAT CAPABILITIES	7,307		7,307
121	0605013BL	INFORMATION TECHNOLOGY DEVELOPMENT	11,937		11,937
122	0605018BTA	DEFENSE INTEGRATED MILITARY HUMAN RESOURCES SYSTEM (DIMHRS)	11,800		11,800
123	0605020BTA	BUSINESS TRANSFORMATION AGENCY R&D ACTIVITIES	184,131	-3,700	180,431
		Intergovernmental Value Added Network		[-3,700]	
124	0605021SE	HOMELAND PERSONNEL SECURITY INITIATIVE	391		391
125	0605027D8Z	OUSD(C) IT DEVELOPMENT INITIATIVES	5,000		5,000
126	0605140D8Z	TRUSTED FOUNDRY	35,512		35,512
127	0605648D8Z	DEFENSE ACQUISITION EXECUTIVE (DAE) PILOT PROGRAM	0		0
128	0303141K	GLOBAL COMBAT SUPPORT SYSTEM	17,842		17,842
129	0303158K	JOINT COMMAND AND CONTROL PROGRAM (JC2)	0		0
130	0807708D8Z	WOUNDED ILL AND INJURED SENIOR OVERSIGHT COMMITTEE (WII-SOC) STAFF OFFIC	1,590		1,590
		SUBTOTAL, SYSTEM DEVELOPMENT AND DEMONSTRATION (SDD)	**1,029,323**	**-3,700**	**1,025,623**
RDT&E MANAGEMENT SUPPORT					
131	0603757D8Z	TRAINING TRANSFORMATION (T2)	0		0
132	0604774D8Z	DEFENSE READINESS REPORTING SYSTEM (DRRS)	5,113		5,113
133	0604875D8Z	JOINT SYSTEMS ARCHITECTURE DEVELOPMENT	8,052		8,052
134	0604940D8Z	CENTRAL TEST AND EVALUATION INVESTMENT DEVELOPMENT (CTEIP)	162,286	6,830	169,116
		Over the Horizon Broadcast Extension Capability		[6,830]	
135	0604942D8Z	ASSESSMENTS AND EVALUATIONS	2,500		2,500
136	0604943D8Z	THERMAL VICAR	8,851		8,851
137	0605100D8Z	JOINT MISSION ENVIRONMENT TEST CAPABILITY (JMETC)	10,287		10,287

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
138	0605104D8Z	TECHNICAL STUDIES, SUPPORT AND ANALYSIS	49,282	1,000	50,282
		Center for Technology and National Security Policy		[1,000]	
139	0605110D8Z	USD(A&T)--CRITICAL TECHNOLOGY SUPPORT	4,743		4,743
140	0605117D8Z	FOREIGN MATERIAL ACQUISITION AND EXPLOITATION	95,520		95,520
141	0605126J	JOINT INTEGRATED AIR AND MISSILE DEFENSE ORGANIZATION (JIAMDO)	94,577		94,577
142	0605128D8Z	CLASSIFIED PROGRAM USD(P)	0		0
143	0605130D8Z	FOREIGN COMPARATIVE TESTING	32,755		32,755
144	0605142D8Z	SYSTEMS ENGINEERING	29,824		29,824
145	0605161D8Z	NUCLEAR MATTERS-PHYSICAL SECURITY	6,264		6,264
146	0605170D8Z	SUPPORT TO NETWORKS AND INFORMATION INTEGRATION	15,091		15,091
147	0605200D8Z	GENERAL SUPPORT TO USD (INTELLIGENCE)	6,227		6,227
148	0605384BP	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	120,995		120,995
149	0605502BP	SMALL BUSINESS INNOVATIVE RESEARCH - CHEMICAL BIOLOGICAL DEF	0		0
150	0605502BR	SMALL BUSINESS INNOVATION RESEARCH	0		0
151	0605502C	SMALL BUSINESS INNOVATIVE RESEARCH - MDA	0		0
152	0605502D8Z	SMALL BUSINESS INNOVATIVE RESEARCH	0		0
153	0605502E	SMALL BUSINESS INNOVATIVE RESEARCH	0		0
154	0605502S	SMALL BUSINESS INNOVATIVE RESEARCH	0		0
155	0605790D8Z	SMALL BUSINESS INNOVATION RESEARCH (SBIR)/ SMALL BUSINESS TECHNOLOGY TR	2,189		2,189
156	0605798D8Z	DEFENSE TECHNOLOGY ANALYSIS	13,858		13,858
157	0605799D8Z	FORCE TRANSFORMATION DIRECTORATE	19,701		19,701
158	0605801KA	DEFENSE TECHNICAL INFORMATION CENTER (DTIC)	61,054	-5,000	56,054
		Defense Technical Information Center		[-5,000]	
159	0605803SE	R&D IN SUPPORT OF DOD ENLISTMENT, TESTING AND EVALUATION	64,737	-25,000	39,737
		Federal Voting Assistance Program		[-25,000]	
160	0605804D8Z	DEVELOPMENT TEST AND EVALUATION	18,688		18,688

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
161	0605897E	DARPA AGENCY RELOCATION	11,000		11,000
162	0605898E	MANAGEMENT HQ - R&D	56,257		56,257
163	0606100D8Z	BUDGET AND PROGRAM ASSESSMENTS	6,099		6,099
164	0606301D8Z	AVIATION SAFETY TECHNOLOGIES	10,900		10,900
165	0204571J	JOINT STAFF ANALYTICAL SUPPORT	23,081		23,081
168	0303166D8Z	SUPPORT TO INFORMATION OPERATIONS (IO) CAPABILITIES	31,500		31,500
169	0303169D8Z	INFORMATION TECHNOLOGY RAPID ACQUISITION	5,135		5,135
170	0305103E	CYBER SECURITY INITIATIVE	10,000		10,000
171	0305193D8Z	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	21,272		21,272
173	0305400D8Z	WARFIGHTING AND INTELLIGENCE-RELATED SUPPORT	845		845
174	0804767D8Z	COCOM EXERCISE ENGAGEMENT AND TRAINING TRANSFORMATION (CE2T2)	92,253	3,500	95,753
		Modeling and Simulation Development in Support of National Security Training and Decision Analysis		[3,500]	
175	0901585C	PENTAGON RESERVATION	20,482		20,482
176	0901598C	MANAGEMENT HQ - MDA	29,754		29,754
177	0901598D8W	IT SOFTWARE DEV INITIATIVES	278		278
177A	9999999999	CLASSIFIED PROGRAMS	61,577		61,577
		SUBTOTAL, RDT&E MANAGEMENT SUPPORT	**1,213,027**	**-18,670**	**1,194,357**
OPERATIONAL SYSTEMS DEVELOPMENT					
178	0604130V	DEFENSE INFORMATION SYSTEM FOR SECURITY (DISS)	5,522		5,522
179	0605127T	REGIONAL INTERNATIONAL OUTREACH (RIO) AND PARTNERSHIP FOR PEACE INFORM	2,139		2,139
180	0605147T	OVERSEAS HUMANITARIAN ASSISTANCE SHARED INFORMATION SYSTEM (OHASIS)	290		290
181	0607384BP	CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS DEVELOPMENT)	6,634		6,634
182	0607713S	DEPLOYMENT AND DISTRIBUTION ENTERPRISE TECHNOLOGY	0		0
183	0607828D8Z	JOINT INTEGRATION AND INTEROPERABILITY	44,139		44,139
184	0204571J	JOINT STAFF ANALYTICAL SUPPORT	0		0

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
185	0208043J	CLASSIFIED PROGRAMS	2,288		2,288
186	0208045K	C4I INTEROPERABILITY	74,023		74,023
188	0301144K	JOINT/ALLIED COALITION INFORMATION SHARING	9,379		9,379
195	0302016K	NATIONAL MILITARY COMMAND SYSTEM-WIDE SUPPORT	467		467
196	0302019K	DEFENSE INFO INFRASTRUCTURE ENGINEERING AND INTEGRATION	16,629		16,629
197	0303126K	LONG-HAUL COMMUNICATIONS - DCS	9,130		9,130
198	0303131K	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	9,529		9,529
199	0303135G	PUBLIC KEY INFRASTRUCTURE (PKI)	8,881		8,881
200	0303136G	KEY MANAGEMENT INFRASTRUCTURE (KMI)	45,941		45,941
201	0303140D8Z	INFORMATION SYSTEMS SECURITY PROGRAM	14,077		14,077
202	0303140G	INFORMATION SYSTEMS SECURITY PROGRAM	388,827		388,827
204	0303148K	DISA MISSION SUPPORT OPERATIONS	0		0
205	0303149J	C4I FOR THE WARRIOR	2,261		2,261
206	0303150K	GLOBAL COMMAND AND CONTROL SYSTEM	26,247		26,247
207	0303153K	DEFENSE SPECTRUM ORGANIZATION	20,991		20,991
208	0303170K	NET-CENTRIC ENTERPRISE SERVICES (NCES)	3,366		3,366
209	0303260D8Z	JOINT MILITARY DECEPTION INITIATIVE	1,161		1,161
210	0303610K	TELEPORT PROGRAM	6,880		6,880
211	030421088	SPECIAL APPLICATIONS FOR CONTINGENCIES	16,272	4,000	20,272
		Technology Development for Quiet Tactical UAV		[4,000]	
214	0305103D8Z	CYBER SECURITY INITIATIVE	501		501
216	0305103K	CYBER SECURITY INITIATIVE	2,251		2,251
217	0305125D8Z	CRITICAL INFRASTRUCTURE PROTECTION (CIP)	10,486		10,486
221	0305186D8Z	POLICY R&D PROGRAMS	9,136		9,136
223	0305199D8Z	NET CENTRICITY	29,831		29,831
227	030520888	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	1,290		1,290

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230	0305208K	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	3,513		3,513
232	0305219BB	MQ-1 PREDATOR A UAV	98		98
234	0305387D8Z	HOMELAND DEFENSE TECHNOLOGY TRANSFER PROGRAM	2,988		2,988
235	0305600D8Z	INTERNATIONAL INTELLIGENCE TECHNOLOGY ASSESSMENT, ADVANCEMENT AND IN	1,416		1,416
245	0708011S	INDUSTRIAL PREPAREDNESS	21,798		21,798
246	0708012S	LOGISTICS SUPPORT ACTIVITIES	2,813		2,813
247	0902298J	MANAGEMENT HEADQUARTERS (JCS)	2,807		2,807
248	0909999D8Z	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS	0		0
249	1001018D8Z	NATO AGS	93,885		93,885
250	1105219BB	MQ-9 UAV	98		98
251	1160279BB	SMALL BUSINESS INNOVATIVE RESEARCH/SMALL BUS TECH TRANSFER PILOT PROG	0		0
252	1160403BB	SPECIAL OPERATIONS AVIATION SYSTEMS ADVANCED DEVELOPMENT	68,691		68,691
253	1160404BB	SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT	1,582	2,798	4,380
		Naval Special Warfare Tactical Athlete Program		[2,798]	
254	1160405BB	SPECIAL OPERATIONS INTELLIGENCE SYSTEMS DEVELOPMENT	23,879		23,879
255	1160408BB	SOF OPERATIONAL ENHANCEMENTS	62,592		62,592
256	1160421BB	SPECIAL OPERATIONS CV-22 DEVELOPMENT	14,406		14,406
257	1160423BB	JOINT MULTI-MISSION SUBMERSIBLE	14,924		14,924
258	1160426BB	OPERATIONS ADVANCED SEAL DELIVERY SYSTEM (ASDS) DEVELOPMENT	0	5,000	5,000
		Battery Research Initiative: A Partnership of Purdue University and NSWC Crane		[5,000]	
259	1160427BB	MISSION TRAINING AND PREPARATION SYSTEMS (MTPS)	2,915		2,915
260	1160428BB	UNMANNED VEHICLES (UV)	0	4,000	4,000
		SIGINT Payload for Expeditionary Unmanned Aircraft System (EUAS)		[4,000]	
261	1160429BB	MC130J SOF TANKER RECAPITALIZATION	7,624		7,624
262	1160474BB	SOF COMMUNICATIONS EQUIPMENT AND ELECTRONICS SYSTEMS	1,922		1,922
263	1160476BB	SOF TACTICAL RADIO SYSTEMS	2,347		2,347

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Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
264	1160477BB	SOF WEAPONS SYSTEMS	479		479
265	1160478BB	SOF SOLDIER PROTECTION AND SURVIVAL SYSTEMS	593		593
266	1160479BB	SOF VISUAL AUGMENTATION, LASERS AND SENSOR SYSTEMS	0		0
267	1160480BB	SOF TACTICAL VEHICLES	1,994		1,994
268	1160482BB	SOF ROTARY WING AVIATION	14,473		14,473
269	1160483BB	SOF UNDERWATER SYSTEMS	13,986		13,986
270	1160484BB	SOF SURFACE CRAFT	2,933		2,933
271	1160488BB	SOF PSYOP	4,193		4,193
272	1160489BB	SOF GLOBAL VIDEO SURVEILLANCE ACTIVITIES	5,135		5,135
273	1160490BB	SOF OPERATIONAL ENHANCEMENTS INTELLIGENCE	9,167		9,167
274	9999999999	CLASSIFIED PROGRAMS	3,832,019		3,832,019
		SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT	**4,983,838**	**15,798**	**4,999,636**
		TOTAL, RESEARCH, DEVELOPMENT, TEST & EVAL, DW	**20,661,600**	**51,496**	**20,713,096**

Items of Special Interest

Aegis Ballistic Missile Defense and defense against sea-based missile attacks

The committee commends the Department of Defense funding increase for the Aegis Ballistic Missile Defense (BMD) program to advance the capabilities of sea-based missile defense. The committee believes the investment in sea-based missile defenses will serve to strengthen the security of the United States. Nevertheless, the committee believes there are additional steps the Missile Defense Agency (MDA) should take to expand sea-based missile defense capabilities.

First, the committee believes MDA should increase its collaboration with the Navy to ensure sea-based ballistic missile defenses are fully integrated into the broader missile defense Command and Control, Battle Management, and Communications system. Additionally, both the Navy and MDA should work to see Aegis BMD ships receive the widest array of off-board sensor data necessary to support theater, regional and national missile defense operations.

Second, the committee understands that the Department's objectives for pursuing early-intercept capabilities are to handle large raid sizes, provide more shoot-look-shoot opportunities, constrain countermeasure deployments, and hedge against advanced threats. The committee believes that capability enhancements planned for the Standard Missile-3 (SM–3) interceptor may provide such early intercept capability. Specifically, the next-generation SM–3 Block IIA interceptor with a planned increase in velocity and SM–3 Block IIB interceptor with a planned lighter kill vehicle, flexible propulsion, and upgraded fire control software, should enable greater early-intercept capability when fielded in either a ship-based configuration or relocatable land-based configuration. The committee therefore encourages MDA to continue the requisite technology development and maturation of these promising capabilities.

Finally, the committee remains concerned about the nation's vulnerability to cruise missiles and shorter-range ballistic missiles that could be launched from off the coast. This vulnerability is particularly acute for the east coast of the United States. Accordingly, the committee directs the Commander of U.S. Northern Command, with contribution from the Director of MDA and the Director of the Joint Integrated Air and Missile Defense Office, to provide the congressional defense committees with an assessment by March 15, 2011, of the vulnerability of the United States homeland to cruise missiles and shorter-range ballistic missiles that could be launched from off the coast, and a plan for how such vulnerabilities are being addressed.

Center for Technology and National Security Policy at the National Defense University

The budget request contained $49.3 million in PE 65104D8Z for technical studies, support, and analysis, but contained no funds for analyses by the Center for Technology and National Security Policy (CTNSP) at the National Defense University.

The committee recognizes that CTNSP continues to provide valuable support to the Department through the development of a wide range of studies which are designed to inform and sharpen national

security decision making. The committee continues to be the beneficiary of CTNSP studies and CTNSP experts, and encourages the CTNSP to continue to explore issues of importance to the Department and the nation. The committee believes the CTNSP should explore research into several key areas, including science and technology to support irregular warfare, test and evaluation infrastructure, improving integration of social science research into defense programs, and workforce development for future cyber warriors.

The committee recommends $50.3 million, an increase of $1.0 million, in PE 65104D8Z for the CTNSP.

Counter-ideology programs

The budget request contained $78.2 million in PE 63826D8Z for Quick Reaction Special Projects in the Rapid Reaction Technology Office, but included no funds to address the science and technology gaps identified in the "Strategic Communication Science and Technology Plan" from April 2009.

The committee is concerned that the Department of Defense (DOD) has not sufficiently focused its activities to counter violent extremist ideologies. While there are many strategic communication and information operations programs that aim to undermine the ideological narrative of various violent extremist groups, it is not apparent that they are coordinated and supported to the same extent that programs to undermine communism were during the cold war. As noted elsewhere in this report, there are social science programs within the Department that could prove valuable in establishing a concerted program to delegitimize violent extremist ideologies.

The committee encourages the Department to take a holistic view of its messaging and counter-messaging activities and develop a strategy that links these efforts with other science and technology efforts in order to better understand adversarial ideologies. As noted elsewhere in this report, the Department must first understand the ideological environment, including how these groups leverage digital media, and then translate that understanding into synchronized action that coordinates near-, mid-, and far-term actions across the federal government. Active and continuous monitoring should be institutionalized in order to improve the execution of ongoing and future planned efforts.

The committee recommends $88.2 million, an increase of $10.0 million, in PE 63826D8Z for initiatives identified in the April 2009 "Strategic Communication Science and Technology Plan" that focus DOD activities to counter adversarial ideologies.

Cognitive computing efforts

The budget request contained $90.1 million in PE 62304E for Cognitive Computing at the Defense Advanced Research Projects Agency (DARPA). Of this amount, $21.0 million was requested for the Transformative Apps and Healing Heroes programs.

The committee is aware that the goal of the Transformative Apps program is to put mobile, tactical applications in the hands of warfighters and to create a new military apps marketplace with a vibrant development community. The committee understands that the Army Chief Information Officer (CIO) has established a similar development effort called "Apps for the Army," which includes a

cash award competition. The committee believes that because of the CIO's day-to-day experience supporting the warfighting community, the CIO would possess a closer understanding of the warfighter's needs and requirements. The committee is concerned that the DARPA effort is not adequately coordinated and de-conflicted with the Army initiative, or that an adequate case has been made as to the unique challenge that makes this a hard problem requiring DARPA support.

The committee is also aware that the goal of the Healing Heroes effort is to bring the power of social networking, modern information technology, and machine learning to bear on the medical problems of American veterans. Because of the policy and regulatory requirements associated with addressing the medical challenges of our warfighters, such as the Health Insurance Portability and Accountability Act of 1996 (Public Law 104–191) (HIPAA) and the Privacy Act of 1974 (Public Law 93–579), the committee is concerned that DARPA does not have adequate policy expertise to translate these legal strictures into technical systems. While the committee supports the goals of this program, it is not confident that DARPA should lead this type of activity, or that it should pursue technical solutions using real patient data without a well-defined memorandum of agreement with a partner that has deeper experience with HIPAA and Privacy Act information.

Therefore, the committee recommends $69.1 million, a decrease of $21.0 million, in PE 62304E for the Transformative Apps and Healing Heroes programs.

Defense Advanced Research Projects Agency

The committee remains supportive of the mission of the Defense Advanced Research Projects Agency (DARPA) in researching and developing innovative, leap-ahead capabilities for the Department of Defense (DOD). The committee recognizes that DARPA has undergone several corporate changes over the last year, including changes to its management structure, program priorities, execution goals, and business model. The committee commends the new director of DARPA for taking steps to improve the overall efficiency of DARPA operations. Most notably, by making key changes to its financial execution procedures, DARPA's obligation rates are up 17 percent over the average of the previous five years; and are a vast improvement over historical averages.

Despite these improvements, the committee is aware of other potential program execution problems. During its review of DARPA's fiscal year 2011 budget request, the committee noted several programs, in particular the 6.3 programs, lacked clear transition paths. The committee remains concerned that without strong transition paths in place, or programmed service or agency transition funding, many of these programs will fail to be adopted by a program of record or science and technology activity. Additionally, some programs were noted to have late-year starts or were still undergoing performer selections. The committee believes that with only two quarters remaining for the obligation of the fiscal year 2010 funds, DARPA will be unable to effectively obligate the requested funds.

The committee makes a series of recommendations for general reductions in DARPA programs:

[In millions of dollars]

61101E—Defense Research Sciences	(−50M)
62715E—Materials and Biological Technology	(−5M)
62716E—Electronics Technology	(−15M)
63286E—Advanced Aerospace Systems	(−31M)
63287E—Space Programs and Technology	(−2M)
63760E—Command, Control, and Communications Systems	(−2M)
63765E—Classified DARPA Programs	(−15M)
63766E—Network-Centric Warfare Technology	(−15M)
63767E—Sensor Technology	(−5M)

These recommendations are made without prejudice to the particular account identified.

Digital media study

The budget request contained $85.3 million in PE 63122D8Z for Combating Terrorism Technical Support, but contained no funds for efforts to better understand the impact of digital media exploited by extremist groups and individuals.

The committee recognizes the rapid increase in adversarial use of new media products to disseminate their messages and biased rhetoric in order to undermine U.S. interests and entice populations to actively and passively support global terrorism. Various groups around the globe, such as al-Qa'ida and the Taliban, persistently utilize the Internet to recruit, train, and fundraise. Through popular websites, such as video sharing and social networking sites, their misleading and persuasive products often reach the stage of public opinion first, ultimately rendering subsequent factual counter messages useless. The amount of deceptive misinformation continues to grow at a staggering pace and the majority remains unanswered and misunderstood by moderate authorities.

The Department's ability to analyze extremist online propaganda within the proper cultural and linguistic context is critical to comprehending our adversaries' ideological campaign, which is a significant driver for insurgencies and prolonged terrorist attacks. The committee believes defense policy will be appropriately guided if the Department understands the full scope of our enemies' online information campaign.

The committee recommends $87.8 million, an increase of $2.5 million, in PE 63122D8Z for the Combating Terrorism Technical Support Office to conduct an extensive study to determine the state of the virtual media environment our adversaries occupy. The committee also directs the Assistant Secretary of Defense for Special Operations and Low Intensity Conflict and Interdependent Capabilities to brief the House Committee on Armed Services, by February 1, 2011, on the plan for executing this digital media study.

Directed energy research programs

The budget request contained $96.7 million in PE 63901C for directed energy research programs for the Missile Defense Agency (MDA).

The budget request supports transitioning the Airborne Laser (ABL) aircraft to a national laser test platform for advanced directed energy research. It will also allow the MDA to continue focused directed energy research and development to hedge against future threats.

The committee understands that the Director, Defense Research and Engineering (DDR&E) has begun a review of the Department-

wide portfolio of directed energy research efforts in light of the availability of the ABL aircraft to act as the test-bed for directed energy research activities beyond missile defense.

The committee is aware of a number of promising technologies being reviewed that may warrant additional resources, and understands that the review of these technologies is scheduled to be completed by DDR&E in June 2010. However, the committee is concerned that the budget request does not include sufficient funding to support appropriate testing and retention of the ABL workforce, which has developed critical directed energy technology skills.

The committee supports developmental efforts that appear most likely to yield operational capabilities and directs the Director, Defense Research and Engineering to submit a report on the Department's review of directed energy technologies to the congressional defense committees by July 1, 2010.

The committee recommends $146.7 million, an increase of $50.0 million, in PE 63901C to support increased research, development, and testing of directed energy technologies, including using ABL as a test platform.

Environmental management information systems

The committee is aware that the Army has conducted a pilot program to evaluate an internet-based environmental management information system (EMIS). The committee understands that the Army has utilized an EMIS to demonstrate how a system can cost effectively and efficiently automate environmental compliance and greenhouse gas emission tracking and reduction. As a result of this pilot, the Army appears to have experienced cost savings, energy reductions, increased compliance with federal, state and local environmental regulations, while at the same time improving mission readiness and installation sustainability. The committee strongly encourages the Secretary of Defense to examine the lessons learned from this pilot to determine the potential for leveraging this technology to share with other components within the Department of Defense and the other military departments.

Environmental Security Technical Certification Program

The budget request contained $30.4 million in PE 63851D8Z for the environmental security technical certification program.

The committee supports the Department of Defense efforts to demonstrate and promote implementation of innovative cost-effective environmental technologies through the environmental security technical certification program. The committee also supports the efforts of this program, highlighted in the recent Quadrennial Defense Review, to use military installations as a test bed "to demonstrate and create a market for innovative energy efficiency and renewable energy technologies coming out of the private sector and DoD and Department of Energy laboratories." The committee recognizes that much more can be done in this area.

The committee recommends $45.4 million, an increase of $15.0 million, in PE 63851D8Z, including an increase of $10.0 million to accelerate efforts to demonstrate and implement innovative environmental, energy efficiency and renewable energy technologies, and an increase of $5.0 million for a pilot program on collaborative energy security authorized elsewhere within this title.

Federal Voting Assistance Program

The budget request contained $64.7 million in PE 65803SE for research and development supporting the Defense Human Resources Agency. Of this amount, $39.0 million was requested for the Federal Voting Assistance Program (FVAP). The committee required the Department of Defense conduct an electronic absentee voting demonstration project for uniformed services voters in the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107–107). The committee is aware that the immaturity of system standards makes it impossible for the Department of Defense to get the Election Assistance Commission certified system guidelines required by the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (Public Law 108–375) in fiscal year 2011. The committee continues to support the goals of FVAP, but the challenges in maturing the needed system standards calls for a gradual increase in funding to mitigate developmental risks.

Therefore, the committee recommends $39.7 million, a decrease of $25.0 million, in PE 65803SE for the FVAP.

Ground combat uniform research and development

Section 352 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) established, as a policy of the United States, that the design and fielding of all future ground combat and camouflage utility uniforms of the armed forces may uniquely reflect the identity of the individual military services, provided that the ground combat and camouflage utility uniforms, to the maximum extent practicable: (1) provide members of every military service an equivalent level of performance, functionality, and protection commensurate with their respective assigned combat missions; (2) minimize risk to the individual soldier, sailor, airman, or marine operating in the joint battlespace; and (3) provide interoperability with other components of individual war fighter systems, including body armor and other individual protective systems. The committee notes that part of the rationale for section 352 of Public Law 111–84 was to reduce the multiple research, design, development, and fielding efforts for military ground combat uniforms being undertaken by the military departments and to improve the overall combat capability of those assigned to ground combat missions.

In an interim response to section 352 of Public Law 111–84, the Government Accountability Office (GAO) found no performance standards for specific combat environments, no criteria for evaluating the effectiveness of camouflage patterns, and no requirements for the services to test interoperability between their uniforms and other protective gear. Furthermore, while GAO found some examples of uniform technology being shared across the services, the committee emphasizes the importance of sharing new technologies, advanced materials, and other advances in ground combat uniform design and development between the military services. The committee notes that some of the military departments have used the Army Natick Soldier Research, Development, and Engineering Center during development of their ground combat uniforms to test the effectiveness of the camouflage, and, in some cases, camouflage effectiveness of ground combat uniforms and protective gear. The committee believes, however, that Natick's resources could be bet-

ter utilized for joint research and development. Because of its expertise, the committee urges the services to consider expanding their use of the Army Natick Soldier Research, Development, and Engineering Center as a center of excellence for uniform research and development to guide their development of camouflage effectiveness and performance criteria and testing.

Additionally, the committee encourages the Secretary of Defense to consider designating an executive agent (EA) to oversee Department of Defense activities related to research and development of ground combat and camouflage utility uniforms. The committee envisions that such an EA would be similar to the functions performed by the executive agent for operation of the Department of Defense Combat Feeding Research and Engineering Program.

Intergovernmental Value Added Network

The budget request contained $184.1 million in PE 65020BTA for the Business Transformation Agency (BTA), including $3.7 million for the Intergovernmental Value Added Network (IVAN).

The committee is aware that BTA has developed IVAN to address long standing material weaknesses associated with intergovernmental transactions identified by the Government Accountability Office and the Department of Defense Inspector General. IVAN will provide a system for internal control and financial visibility, as well as ensure the timeliness and accuracy of accounting transaction postings. These goals are important for ensuring the full transparency of Department financial transactions as well as providing capabilities necessary to achieve financial audit readiness. The committee supports the objectives of IVAN, but is discouraged that this system has not been transitioned to other military departments or interagency partners. Because there has not been wide spread adoption of IVAN to remedy this long-standing problem, the committee believes that continued investment is unlikely to result in any benefit for the nation.

Therefore, the committee recommends $180.4 million, a decrease of $3.7 million, in PE 65020BTA for IVAN.

Investment review process for human dynamics activities

The committee recognizes the need for human dynamics programs within the Department of Defense, which, according to the Defense Science Board, include "the actions and interactions of personal, interpersonal, and social/contextual factors and their effects on behavioral outcomes." The committee has been supportive of human dynamics activities in the past, such as the Human Terrain System, the Minerva Initiative, cultural engagement teams and associated programs.

The committee believes that for the Department to have a robust human dynamics effort, it requires senior leadership engagement and a governance forum for understanding the range of service and combatant commander requirements, existing programs, program gaps and required resources needed to create a critical mass of expertise within the government.

The committee also recognizes that one area in particular that would benefit from senior leadership would be data standards and data tagging methodologies for socio-cultural information. The committee understands that collecting useful socio-cultural information

in a manner that can be ingested and analyzed by automated information processing systems is a key technical challenge to integrating human terrain understanding into the overall battlespace operational picture.

The committee recommends that the Secretary of Defense establish a process, including a reviewing and decision-making body, to review investments and recommend programming decisions for Department of Defense programs associated with human dynamics. This process should also serve as intra- and interdepartmental coordination body for human dynamics research. The committee directs the Secretary of Defense to report on the development of the investment review process to the Senate Committee on Armed Services and the House Committee on Armed Services within 180 days after the date of enactment of this Act.

Israeli cooperative programs

The budget request contained $121.7 million in PE 63913C for Israeli cooperative programs. This represents a decrease of $79.6 million from the fiscal year 2010 appropriated level. The fiscal year 2011 budget request contained $46.7 million for continued development of David's Sling Weapon System (DSWS), $12.2 million for improvements to the Arrow Weapon System (AWS), and $50.8 million for Arrow-3.

Since 1986, the United States and the State of Israel have cooperated on missile defense. The U.S. Missile Defense Agency (MDA) has three significant initiatives with Israel to develop and improve its indigenous capability to defend against short- and medium-range ballistic missiles: DSWS for defense against short-range systems; AWS for defense against medium-range systems; and the Arrow-3 Interceptor, an upper-tier follow-on to the AWS. MDA is also developing, testing, and exercising interoperability between the U.S. ballistic missile defense system (BMDS) and the Israeli Missile Defense Architecture to ensure Israeli systems can be integrated into the global BMDS.

However, the budget request does not support acceleration of full scale development of the DSWS, completion of the development and testing of AWS improvements, and beginning coproduction of the Arrow-3 interceptor. The committee is aware that progress has been achieved over the past year in meeting the agreed Arrow-3 knowledge points.

The committee recommends $209.7 million for Israeli cooperative programs, an increase of $88.0 million in PE 63913C, including $84.7 million for DSWS, $54.2 million for AWS improvements, and $58.8 million for Arrow-3.

K–12 education in computer sciences and mathematics

The budget request contained $328.2 million in PE 61101E for basic research in the Defense Advanced Research Projects Agency (DARPA), including funds for the Computer Futures program; $48.3 million in PE 65803A for basic research in the Army, including funds for the Army Educational Outreach Program; and $429.8 million in PE 61153N for basic research in the Navy, including funds for educational outreach programs in science, technology, engineering, and mathematics (STEM) to stimulate careers in computer science and engineering.

The committee remains concerned about reports such as the National Academy of Science study "Rising Above the Gathering Storm" which indicate that the United States may not be producing sufficient numbers of scientists and engineers (S&E) to meet our future national security needs. The strength of the nation is founded on a knowledge economy. If the nation is unable to meet the demands in S&Es, it will have severe detrimental effects on the defense sector and the broader economic health of the nation. Facing a similar challenge 50 years ago, President Eisenhower increased investments in science and mathematics education that made significant progress in the years that followed. However, in the past several decades the impact of those investments has declined.

In that same spirit, service and agency investments in K–12 educational outreach programs represent an investment in the nation's intellectual capital that the committee believes will reap significant rewards in the future. The Computer Futures program is supporting K–12 educational programs to develop and foster students in computer science and mathematics at an early age in order to create a pipeline to support the nation's future scientific and engineering needs in these areas. The Army Educational Outreach Program includes a range of Army-sponsored research, education, competitions, internships and practical experiences designed to engage and guide students and teachers in STEM education. The Navy also supports a similar variety of STEM opportunities.

The committee recommends $329.2 million, an increase of $1.0 million, in PE 61101E for DARPA's Computer Futures program to create and validate additional curriculum covering new topics, and to expand the program into new school systems. The committee recommends $49.3 million, an increase of $1.0 million, in PE 65803A for expansion of the Army Educational Outreach Program to create new curricula and to expand the geographic diversity of the participating schools. The committee also recommends $430.8 million, an increase of $1.0 million, in PE 61153N for the expansion of the Navy educational outreach program to provide more focus on cyber-related computer science and mathematics students.

Knowledge, Innovation, and Technology Sharing

The committee remains committed to ensuring that knowledge created through the Department of Defense's (DOD) research and development programs are fully exploited across the DOD science and technology enterprise. The committee notes that over the past several years, the Army has developed and implemented the Knowledge, Innovation, and Technology Sharing (KITS) system. The committee understands that the KITS system is an innovation and knowledge management tool designed to identify, capture, manage, and share information generated by service-funded research and development activities. The KITS system enables researchers, procurement staff, technology transition agents, and patent attorneys to capture vital innovation knowledge generated by Army-funded research and development activities and store it in a single integrated database. The committee notes that KITS is currently operational at five Army research, development, and engineering organizations. The committee believes that such an integrated system could foster greater collaboration on technology development and transitions issues in support of the Department and

industry and should be made available across the DOD research and development community.

The committee directs the Secretary of Defense, acting through the Director, Defense Research and Engineering, to review the Army KITS systems and brief the Senate Committee on Armed Services Committee and the House Committee on Armed Services Committee, by September 15, 2010, on the utility of the program for use across the services and relevant agencies, including the cost of adopting the system, as well as any potential savings it may offer the defense science and technology enterprise.

Management of defense basic research

The committee is encouraged by recent sustained increases for basic research within the Department of Defense (DOD). The committee recognizes the critical contribution basic research investments make in creating a strong scientific foundation that supports the long-term development of future military capabilities.

The committee notes the concerns regarding the defense basic research program raised by the JASON scientific advisory group and the National Academy of Sciences Committee on Department of Defense Basic Research. Considering the increasing investments being made in defense basic research, the committee remains concerned about the quality, relevance, and focus of the basic research efforts, and the coordination of those efforts within the Department, including the services and the Defense Advanced Research Projects Agency, and relevant programs within the federal government.

The committee is encouraged that the Basic Science Office, within the Office of the Secretary of Defense, recently proposed a clear, actionable strategic defense basic research plan that would address many of those concerns. The committee supports the five goals set forth to strengthen the defense basic research enterprise, including:

(1) Provide scientific leadership for the DOD basic research enterprise;

(2) Attract the nation's best scientists and engineers to contribute to and lead DOD research;

(3) Ensure the coherence and balance of the DOD basic research portfolio;

(4) Foster connections between DOD performers and the DOD community;

(5) Maximize the discovery potential of the defense research business environment.

The committee is concerned that the proposed basic research strategy is not properly resourced to develop and execute useful management tools for ensuring the quality and relevance of defense basic research. Therefore, the committee encourages the Secretary of Defense to provide adequate resources to oversee, plan, execute, and evaluate its basic research program and investments. Further, the committee directs the Secretary of Defense to provide a briefing to the Senate Committee on Armed Services and the House Committee on Armed Services by September 1, 2010, on actions being taken to implement the proposed basic research strategy.

Mechanism to provide funds for defense laboratories

Section 219 of the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009 (Public Law 110–417), as amended by section 2801 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84), granted the directors of the Department of Defense laboratories the authority and resources to conduct, at their discretion, a program for innovative research and development, incentives to hire and retain skilled scientists and engineers, transition of technology to warfighters, and funding of minor construction projects. The committee notes that the statute requires that all funds available to laboratory directors, up to three percent, may be used to support the selected efforts. The committee is concerned that the utilization of section 219 of Public Law 110–417, due to various reasons, has not been fully implemented across the Department of Defense laboratories. The committee reminds the Department of Defense that the use of all funds include, directly appropriated funds, funds derived from work for other Department of Defense organizations, other federal agencies, and non-federal organizations, or from other sources of laboratory revenue, excluding congressionally directed appropriations. The intent of section 219 of Public Law 110–417 is to provide authorization to access up to three percent of all such funds.

The committee believes that to improve the performance and technical capabilities of the laboratories requires a proper balance between central management control and local director discretion. However, the Department of Defense's laboratory corporate structure provides consultation, not direction, to the laboratory directors. Section 219 of Public Law 110–417 is modeled after the successful Department of Energy Laboratory Directed Research and Development program, and affords Department of Defense laboratory directors the opportunity to reinvigorate the in-house workforce and programs essential to the development of military capabilities.

The committee is concerned that the Department of Defense is not moving expeditiously to implement this useful new authority. The committee directs the Secretary of Defense and the secretaries of the military departments to provide the Senate Committee on Armed Services and the House Committee on Armed Services a briefing, by September 1, 2010, on the details of the status of implementation of section 219 of Public Law 110–417, as amended by section 2801 of Public Law 111–84, including specific bureaucratic, regulatory, and statutory barriers to full implementation and the organizations involved in those barriers, and a schedule for full implementation of this section as intended.

Missile Defense Agency special programs

The budget request contained $270.2 million in PE 63891C for Missile Defense Agency (MDA) special programs.

The committee recommends $245.2 million, a decrease of $25.0 million, in PE 63891C for MDA special programs.

Missile defense command, control, and communications

The committee is concerned that a potential adversary could conduct cyber attacks and/or satellite communications (SATCOM) jamming against elements of the missile defense network. These tech-

nologies are readily available and have proliferated. An attack against the missile defense network could have asymmetric effects and may imperil the defense of national interests at home and abroad.

The committee directs the Commander of U.S. Strategic Command and the Director of the Missile Defense Agency to prepare a joint report on actions planned or taken to mitigate the threat posed to theater, regional, and global missile defense command, control, communications, and computer capabilities by cyber and SATCOM jamming threats. The report should identify key nodes and vulnerabilities and any actions taken to protect those nodes and mitigate the vulnerabilities. The report may be delivered in classified form but should include an unclassified summary.

The committee further directs the Commander and the Director to submit this report to the congressional defense committees within 180 days after the date of enactment of this Act.

Multi-Agency Collaboration Environment

The committee is aware that the office of the Assistant Secretary of Defense for Networks and Information Integration sponsored a program intended to break down interagency information stovepipes and promote greater information sharing among the Department of Defense and its partners. The Multi-Agency Collaboration Environment (MACE) is an innovative effort to address many of the information sharing problems identified by the 9/11 Commission which continue to plague the U.S. Government. MACE provides a unique proving ground for federated information sharing architectures and techniques. Equally important, the contracting paradigm for MACE is a radical departure for the Department, and offers a potential future standard that leverages Darwinian principles in support of information systems program management. The committee plans to closely monitor the progress of MACE, and encourages the Department to make greater use of this capability.

Over-the-horizon broadcast extension capability

The budget request contained $162.3 million in PE 64940D8Z for Central Test and Evaluation Investment Development.

The committee directs the Secretary of the Air Force to develop, by January 1, 2012, an over-the-horizon broadcast extension capability by the Air Force 46th Test Squadron. The purpose of this capability is to provide Air National Guard elements with a mission critical data link that is integrated with test data networks, allowing sharing of tactical data link data by geographically-separated ranges.

The committee recommends $169.1 million in PE 64940D8Z, an increase of $6.8 million, for Central Test and Evaluation Investment Development.

Regional missile defense plans

The new Phased Adaptive Approach (PAA) for missile defense in Europe announced by the President on September 17, 2009, is likely to create increased force structure and inventory demands. Furthermore, as noted in the Ballistic Missile Defense Review (BMDR) released on February 1, 2010, the Phased Adaptive Approach is to be tailored to other geographic regions such as East Asia and the

Middle East, which is also likely to create significant force structure and inventory demands. As acknowledged in the BMDR, "regional demand for U.S. BMD assets is likely to exceed supply for some years to come."

Until these regional missile defense architectures are completed, the committee is concerned that the Department's missile defense force structure and inventory requirements, and the resulting resource implications will be difficult to quantify. In addition, certain missile defense capabilities, such as Aegis ballistic missile defense ships, will remain high demand, low density assets that must be carefully managed across the combatant commands so that no one theater accepts greater risk at the expense of another.

The committee is aware that the Department is developing regional missile defense architectures based on the PAA and also developing a comprehensive force management process. The committee directs the Secretary of Defense, in coordination with the Chairman of the Joint Chiefs of Staff, to provide a report to the congressional defense committees by December 1, 2010, describing: (1) the regional missile defense architectures, including the force structure and inventory requirements derived from the architectures, and (2) the comprehensive force management process, and the capability, deployment, and resource outcomes that have been determined by this process.

Role of non-lethal weapons

The committee reiterates its belief that non-lethal weapons (NLW) can and should play an increasingly important role in meeting the evolving requirements of U.S. military strategy. The committee supports a robust science and technology effort leading to deployment of non-lethal weapons capabilities, including directed energy technologies, which can provide escalation-of-force options to the warfighter for situations where the use of lethal force may be counterproductive to U.S. goals and objectives.

The committee appreciates the Department's "Report on Requirements for Non-Lethal Weapons", submitted in response to a requirement in committee report (H. Rept. 111–166) accompanying the National Defense Authorization Act for Fiscal Year 2010. The committee notes that the December 2009 Report stated that "Non-lethal weapons will continue to make useful contributions in a range of military operations for the foreseeable future." In the letter of transmittal, the Under Secretary of Defense for Acquisition, Technology, and Logistics wrote that the Department "strongly supports the timely development and fielding of NLW for the armed forces." The report also identified actions being taken by the Department to address the concerns raised in the April 2009 Government Accountability Office report titled, "DOD Needs to Improve Program Management Policy, and Testing to Enhance Ability to Field Operationally Useful Non-Lethal Weapons."

Despite these positive developments, the committee remains concerned that the Department does not fully appreciate the important role non-lethal capabilities can play in helping to ensure mission success. For example, the Secretary of Defense, Chairman of the Joint Chiefs of Staff, Commander, U.S. Central Command, and the Commander, U.S. Forces Afghanistan, have reaffirmed the need to limit unintended non-combatant casualties in on-going contingency

operations; yet they have not explicitly identified the role non-lethal weapons can play in achieving this end.

The committee believes the importance of non-lethal weapons has increased as a result of the shift in United States military strategy toward civilian casualty avoidance, particularly in the Islamic Republic of Afghanistan. Moreover, although the goal of civilian casualty avoidance is likely to be an enduring requirement of future U.S. military engagements, the importance of non-lethal weapons is not explicitly recognized in the 2010 Quadrennial Defense Review. In addition, the research and development budget requests for fiscal year 2011, for both the Joint Non-Lethal Weapons Program and the individual service NLW programs are less than the appropriated amounts for fiscal year 2010, which are insufficient to close the capability gaps referenced in the Department of Defense report to Congress. Procurement funding has declined substantially in recent years and is less than one-fifth of the total fiscal year 2011 Department of Defense non-lethal weapons budget request, complicating the ability to field systems more broadly in support of current counter-piracy, stability operations, or other unconventional and irregular contingencies. These budgetary trends do not reflect an urgent need for non-lethal capabilities, despite the Department's affirmation of their continuing utility. The committee is troubled by this apparent disconnect.

The committee's oversight of the Department's non-lethal weapons activities is handicapped by the lack of comprehensive and easily identifiable data on non-lethal weapons budgets and programs. These programs are grouped in multiple categories, depending upon whether the program is a joint or service initiative, or in the research, development, or acquisition phase. Moreover, funding is contained in multiple service line items that are not easily identifiable. This complicates the ability to understand the breadth of the Department's non-lethal weapons program in order to avoid program duplication and redundancies. Elsewhere in this report, the committee directs the military departments to clearly identify a procurement account for NLW line items in their future year budget submissions. The committee expects that each line item description will identify the specific programs for which funds are being requested; provide summary justification for the program; identify whether the program is a joint or service-specific initiative; and the amount of funding provided during the past fiscal year. The committee also expects the Department to provide similar information for all budget requests for research, development, test, and evaluation for NLWs.

The Department's report also states that, "Commander, Central Command has mandated NLW training as a prerequisite for deploying forces." Consistent with the deployment of force application and force protection capabilities, the committee believes that effective operational testing and evaluation, as well as proper training on non-lethal weapons are critical to effective fielding. Elsewhere in this report, the committee directs the Secretary of Defense to begin operationally testing, including training of counter-personnel NLWs prior to fielding these devices to deploying service members.

Science, technology, engineering, and mathematics workforce

The committee believes that one of the enduring strengths of the Department of Defense is the technological capability provided by a strong science, technology, engineering, and mathematics (STEM) workforce. The committee has repeatedly expressed concerns, echoed by reports from the National Academy of Science and the Defense Science Board, which indicate that the United States is not producing sufficient numbers of qualified scientists and engineers to meet our future national security needs. In addition to the national security implications, the committee agrees with leading economists that the continual decline in the STEM workforce will have a significant impact on our economic security, affecting the nation's competitiveness and technological leadership on the world stage.

The committee commends the service secretaries and the Secretary of Defense for placing increased emphasis on developing and implementing STEM programs, particularly K–12 programs, but remains concerned that there has not been a commensurate increase in planning, coordination or investments across the Department. The committee is disappointed that the Secretary of Defense has not complied with a March 31, 2009, deadline for a response to a study required in the committee report (H. Rept. 110–652) accompanying the Duncan Hunter National Defense Authorization Act for Fiscal Year 2009. The committee directed the Secretary to include in the study the findings from an assessment of all STEM related programs across the Department and the recommendations for the enhancement and coordination of such programs.

The committee emphasizes that the Department of Defense has a mandate to continually analyze, understand, and address critical STEM needs in areas, such as:

(1) Enduring scientific and technical disciplines where the Department of Defense may potentially have critical shortages in personnel or expertise;

(2) Emerging scientific and technical areas where the Department should promote growth of the workforce;

(3) Tools necessary to foster and grow a diverse and culturally competent STEM workforce; and

(4) Efforts that mutually support broader national goals to promote STEM education and increase the international competiveness of the United States.

The committee encourages the Secretary of Defense to conduct greater mentoring and outreach with STEM professional societies or other organizations to help support STEM education outreach programs. The committee urges the Secretary of Defense and the service secretaries to do more to increase diversity and equity in the STEM workforce pipeline in order to leverage the untapped potential of a broader range of the population. Not only does this have the potential to increase the resource pool to support traditional scientific and engineering pursuits for national defense, but it also has the potential to provide valuable benefits for other related organizations, such as the intelligence community, the Foreign Service, and the acquisition corps.

Special Operations Technology Development

The budget request contained $26.5 million in PE 1160401BB for Special Operations Technology Development (SOTD).

The committee recognizes that SOTD provides valuable support to U.S. Special Operations Command (USSOCOM) through the development of laboratory prototypes for applied research and technology projects. The committee also recognizes that SOTD provides USSOCOM with an ability to make small incremental investments with the Department, other government agencies, and commercial organizations in order to influence the direction of emerging technologies and capabilities in support of U.S. Special Operations Forces (USSOF).

The committee notes that the list of unfunded requirements it received for USSOCOM research and development efforts is in excess of $41.0 million, indicating significant shortfalls in this critical area. The committee understands that these unfunded requirements would provide transformational enhancements for USSOF engaged in direct and indirect missions in the Republic of Iraq, the Islamic Republic of Afghanistan, and other areas.

The committee recommends $31.5 million, an increase of $5.0 million, in PE PE 1160401BB for Special Operations Technology Development to support USSOCOM research and development unfunded requirements, including digital night vision devices, non-lethal weapons applications, and classified program areas in direct support of USSOF missions.

Test Resource Management Center budget certification briefing

The committee recognizes that the Director, Test Resource Management Center is required to review and certify as adequate the budgets of each military department, Operational Test and Evaluation, and each Defense Agency with test and evaluation responsibilities as directed by section 231 of the National Defense Authorization Act for Fiscal Year 2003 (Public Law 107–314) that established the Test Resource Management Center. Further, section 251 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) amended section 196(c) of title 10, United States Code to grant the Director, Test Resource Management Center the same authority to military service department information as provided the Director, Operational Test and Evaluation to ensure that the Director has access to all the information needed to certify service budgets and provide recommendations regarding Department of Defense test and evaluation infrastructure. The committee seeks to ensure that communication between the Test Resource Management Center and the services and agencies is adequate for the performance of the Director's legislated duties. Therefore, the committee directs the Director, Test Resource Management Center to brief the committee by December 1, 2010 on the budget certification process for fiscal year 2012.

Trusted computing in defense systems

The committee commends the Department of Defense for developing a robust framework for risk management of the global supply chain. The report provided to the committee in response to section 254 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) clearly shows that the Department of Defense

assessed the threats to the entire spectrum of hardware and software for gathering, storing, transmitting, retrieving, or processing information, including counterfeit as well as maliciously manipulated components.

The committee encourages the Department to build upon this work through the establishment of additional pilot projects to test out this risk management framework, which may prove useful in refining technologies or concepts requiring greater maturation, as well as integrating risk management practices more broadly across the Department.

Unmanned systems manning

The committee recognizes the importance of unmanned systems and encourages the Department of Defense to continue investing in technology that reduces manning requirements for current system operations. The committee believes the Department should pursue technologies that allow high levels of automation of routine tasks thus allowing mission management by significantly fewer personnel.

Unmanned system technology development

The committee recognizes the urgent need to develop new unmanned technologies that are more responsive to battlefield conditions and constantly evolving enemy tactics. The committee encourages the use of joint training exercises, like Trident Spectre, to achieve rapid technology development and a higher level of responsiveness within the acquisition process.

OPERATIONAL TEST AND EVALUATION, DEFENSE

Overview

The budget request contained $194.9 million for Operational research, development, test, and evaluation (RDT&E). The committee recommends $194.9 million, the requested amount for fiscal year 2011.

Title II - Research, Development, Test and Evaluation

(Dollars in Thousands)

Line	Program Element	Program Title	FY 2011 Request	House Change	House Authorized
OPERATIONAL TEST & EVAL, DEFENSE					
RDT&E MANAGEMENT SUPPORT					
001	0605118OTE	OPERATIONAL TEST AND EVALUATION	59,430		59,430
002	0605131OTE	LIVE FIRE TEST AND EVALUATION	12,899		12,899
003	0605814OTE	OPERATIONAL TEST ACTIVITIES AND ANALYSES	122,581		122,581
		SUBTOTAL, RDT&E MANAGEMENT SUPPORT	**194,910**		**194,910**
		TOTAL, OPERATIONAL TEST & EVAL, DEFENSE	**194,910**		**194,910**

Items of Special Interest

Joint test and evaluation program

The committee is aware that the Department of Defense supports a program within operational test and evaluation that is chartered to provide non-materiel solutions to resolve joint warfighting issues. The committee recognizes that the Joint Test and Evaluation (JT&E) program has been successful at providing rapid and affordable solutions to joint problems by crafting solutions that address the full range of doctrinal, organizational, training, logistical, personnel and facilities challenges, rather than relying solely on developing technology solutions.

The committee encourages the Department of Defense to make greater use of the expertise in JT&E as part of the larger drive to improve capabilities development and requirements generation for the Department. Furthermore, the committee believes that the JT&E program is a critical enabler for weapon systems acquisition reform, especially as it supports analysis of alternatives that explore solutions beyond the development of new technologies. The committee also recognizes that if JT&E is leveraged appropriately in the acquisition process, it could be used to either obviate the need for some technology development, or in other cases provide additional refinement of the upfront requirements development.

LEGISLATIVE PROVISIONS

SUBTITLE A—AUTHORIZATION OF APPROPRIATIONS

Section 201—Authorization of Appropriations

This section would establish the amounts authorized to be appropriated for research, development, test, and evaluation for the Department of Defense for fiscal year 2011.

SUBTITLE B—PROGRAM REQUIREMENTS, RESTRICTIONS, AND LIMITATIONS

Section 211—Report Requirements for Replacement Program of the Ohio-Class Ballistic Submarine

This section would convey the sense of Congress that sea-based strategic deterrence provided by Navy ballistic missile submarines have been essential to the national security of the United States and that the Ohio-class submarines should be replaced with a new class of submarine designed to ensure there are no gaps in our current strategic deterrence capability. This section would further express the sense of Congress that prior to requesting over one billion dollars in research and development funding to develop a replacement for the Ohio-class submarine in advance of a milestone A decision, the Department of Defense should have made available to Congress the guidance issued with regard to the conduct of an analysis of alternatives and the results of such an analysis of alternatives. Lastly, this section would restrict the obligation of more than 50 percent of authorized funds for this development program until the Secretary of Defense submits a report to the congressional defense committees outlining the guidance associated with, and results of an analysis of alternative capabilities, the cost and sched-

ule projections for each alternative capability, and the time needed to develop and deploy each alternative capability, along with the reasoning associated with the decision to replace the current sea-based strategic deterrent force with a new class of ships designed to carry the current weapons system.

Section 212—Limitation on Obligation of Funds for F–35 Lightning II Aircraft Program

This section would limit the obligation of amounts authorized to be appropriated or otherwise made available for fiscal year 2011 for research, development, test and evaluation for the F–35 Lightning II program to 75 percent until 15 days after the Under Secretary of Defense for Acquisition, Technology, and Logistics certifies in writing to the congressional defense committees that all funds made available for the continued development and procurement of a competitive propulsion system for the F–35 Lightning II have been obligated.

Section 213—Inclusion in Annual Budget Request and Future-Years Defense Program of Sufficient Amounts for Continued Development and Procurement of Competitive Propulsion System for F–35 Lightning II Aircraft

This section would amend chapter 9 of title 10, United States Code, by adding a new section 236 that would require that the Secretary of Defense shall ensure that each annual budget and each Future Years Defense Program for fiscal year 2012 and each fiscal year thereafter, submitted to Congress under section 1105(a) of title 31, United States Code, include amounts necessary for the continued development and procurement of a competitive propulsion system for the F–35 Lightning II. This section would also require that the Secretary of Defense shall ensure that of the funds authorized to be appropriated for fiscal year 2012 or any year thereafter for research, development, test, and evaluation and procurement be obligated and expended in sufficient annual amounts for the continued development and procurement of two options for the F–35 Lightning II propulsion system in order to ensure the development and competitive production of the F–35 Lightning II propulsion system. Additionally, this section would amend the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181) by striking section 213.

Section 214—Separate Program Elements Required for Research and Development of Joint Light Tactical Vehicle

This section would establish separate and distinct program elements in Army, research, development, test and evaluation, and in Navy, research, development, test, and evaluation accounts for the Joint Light Tactical Vehicle (JLTV) program, beginning in fiscal year 2012.

The committee supports the JLTV program. The committee recognizes the JLTV program is a required and ambitious attempt to replace high mobility multi-purpose wheeled vehicles across the Army, Marine Corps, Air Force, and Special Operations Forces. The committee is aware the current JLTV acquisition strategy implements an incremental approach to development and the program is

approximately 18 months into a 36 month development effort. The committee notes initial competitive prototype testing will begin in fiscal year 2010. The committee supports this incremental and competitive prototype approach and believes the JLTV program is too important to fall victim to cost growth and unnecessary schedule delays that have plagued other Department of Defense major defense acquisition programs that entered into the Engineer Manufacturing and Development phases prematurely.

The committee notes JLTV investment to date is approximately $298.5 million but projected investment in JLTV for fiscal years 2011–15 will be at least $9.7 billion. Therefore, the committee believes a program of this capacity and scope requires extensive oversight, and the establishment of a separate and distinct program element would provide the congressional defense committees with increased transparency into the program, as well as allow for more effective oversight.

SUBTITLE C—MISSILE DEFENSE PROGRAMS

Section 221—Limitation on Availability of Funds for Missile Defenses in Europe

This section would limit the availability of funds for construction and deployment of either medium-range or long-range missile defense systems in Europe until: (1) any nation hosting such a system has signed and ratified a missile defense basing agreement and status of forces agreement authorizing deployment; and (2) 45 days have elapsed following the receipt by the congressional defense committees of the report on the independent assessment of alternative missile defense systems in Europe required by section 235 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84).

This section would also repeal and restate a modified version of section 234 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84) to add a limitation on medium-range missile defense interceptors, such as the "Aegis Ashore" concept proposed by the Administration as part of the "Phased Adaptive Approach" announced on September 17, 2009, to the limitation imposed by existing law on acquisition (other than for initial long-lead procurement) or deployment of operational interceptors of a long-range missile defense system in Europe. The limitation would be removed when the Secretary of Defense submits to the congressional defense committees a report certifying that the proposed interceptor to be deployed as part of such a missile defense system has demonstrated, through successful, operationally realistic flight testing, a high probability of working in an operationally effective manner and that such missile defense system has the ability to accomplish the mission.

Section 222—Repeal of Prohibition of Certain Contracts by Missile Defense Agency With Foreign Entities

This section would repeal the ban on use of Department of Defense funds to contract with a foreign government or foreign firm on research, development, test, or evaluation related to missile de-

fense, as required by section 222 of the National Defense Authorization Act for Fiscal Years 1988 and 1989 (Public Law 100–180).

Repealing this section would eliminate unnecessary impediments to allow the Missile Defense Agency to collaborate more closely with our friends and allies to defend against global missile threats as called for in the Administration's Ballistic Missile Defense Review.

Section 223—Phased, Adaptive Approach to Missile Defense in Europe

This section would require the Secretary of Defense to submit a report to the congressional defense committees on the phased, adaptive approach to missile defense in Europe. The section would also require the Comptroller General of the United States to submit a report to the congressional defense committees assessing the report of the Secretary. Finally, the section would prevent obligation of more than 95 percent of funds available for Defense-Wide Operations and Maintenance for the Office of the Secretary of Defense until the date on which the report required of the Secretary is submitted to the congressional defense committees.

Section 224—Homeland Defense Hedging Policy

This section contains five findings concerning missile defense threats from the Islamic Republic of Iran, the Administration's phased, adaptive approach to missile defense, and hedges against unforeseen circumstances.

Further, this section would make it the policy of the United States government to:

(1) Field missile defense systems in Europe that provide protection against medium- and intermediate-range ballistic missile threats consistent with NATO policy and the phased, adapted approach, and have been confirmed to perform the assigned mission after successful, operationally-realistic testing;

(2) Field missile defenses to protect the territory of the United States pursuant to the National Missile Defense Act of 1999 (Public Law 106–38) and to test those systems in an operationally realistic manner;

(3) Ensure that the Standard Missile–3 Block IIA interceptor planned for Phase 3 of the phased, adaptive approach for missile defense is capable of addressing intermediate-range ballistic missiles launched from the Middle East, and that the Standard Missile–3 Block IIB interceptor planned for Phase 4 of such approach is capable of addressing intercontinental ballistic missiles launched from the Middle East; and

(4) Continue the development and testing of the two-stage ground-based interceptor to maintain it (1) as a means of protection in the event that: the intermediate-range ballistic missile threat to North American Treaty Organization allies in Europe materializes before the availability of the Standard Missile–3 Block IIA interceptor; the intercontinental ballistic missile threat to the United States that cannot be countered with the existing ground-based missile defense system materializes before the availability of the Standard Missile–3 Block IIB interceptor; or technical challenges or schedule delays af-

fect the Standard Missile–3 Block IIA interceptor or the Standard Missile–3 Block IIB interceptor; and (2) as a complement to the missile defense capabilities deployed in Alaska and California for the defense of the United States.

Section 225—Independent Assessment of the Plan for Defense of the Homeland Against the Threat of Ballistic Missiles

This section would require the Secretary of Defense to contract with an independent entity to conduct an assessment of Department of Defense plans for defending the territory of the United States against the threat of attack by ballistic missiles, including electromagnetic pulse attacks, as such plans are described in the Ballistic Missile Defense Review submitted to Congress on February 1, 2010, and the report submitted to Congress under Section 232 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84).

Section 226—Study on Ballistic Missile Defense Capabilities of the United States

This section would require the Secretary of Defense, in coordination with the Chairman of the Joint Chiefs of Staff, to conduct a joint capabilities mix study on the ballistic missile defense capabilities of the United States and submit a report on the results to the congressional defense committee on or about the time of the budget submission for fiscal year 2012.

Section 227—Reports on Standard Missile System

This section would require the Secretary of Defense to submit to the congressional defense committees a report on the standard missile system, particularly with respect to Standard Missile–3 Block IIA and Standard Missile-3 Block IIB, no later than 90 days after the date of the enactment of this Act, and each 180-day period thereafter.

SUBTITLE D—REPORTS

Section 231—Report on Analysis of Alternatives and Program Requirements for the Ground Combat Vehicle Program

This section would limit the Secretary of the Army from obligating more than 50 percent of fiscal year 2011 research and development funding for the Army Ground Combat Vehicle program until certain program documentation is provided to the congressional defense committees.

Section 232—Cost Benefit Analysis of Future Tank-Fired Munitions

This section would require the Secretary of the Army, by March 15, 2011, to submit a cost benefit analysis of future options for developing tank-fired munitions.

Section 233—Annual Comptroller General Report on the VH–(XX) Presidential Helicopter Acquisition Program

This section would require the Comptroller General to conduct an annual review of the VH–(XX) Presidential Helicopter acquisition program, during the period from 2011 to 2018, and provide a report to the congressional defense committees by March 1 of every year during the reporting period.

Section 234—Joint Assessment of the Joint Effects Targeting System

This section requires the Under Secretary of Defense for Acquisition, Technology, and Logistics to form a joint assessment team to review the joint effects targeting system and report back to the congressional defense committees on the team's findings.

SUBTITLE E—OTHER MATTERS

Section 241—Escalation of Force Capabilities

This section would require the Secretary of Defense, acting through the Director of Operational Test and Evaluation and in consultation with the Executive Agent for Non-Lethal Weapons, to carry out a program to operationally test and evaluate counter-personnel non-lethal weapons and report to the congressional defense committees on matters affecting the fielding of such capabilities.

This section would direct the Secretary to provide a dedicated procurement line item in future defense budget submissions for non-lethal weapons.

Section 242—Pilot Program to Include Technology Protection Features During Research and Development of Defense Systems

This section would allow the Department of Defense (DOD) to establish a pilot program in order to develop technology protection features during the research and development phases for any DOD system. Features that might be included in this pilot would include technology and engineering design activity, such as capability differentials, anti-tamper, system assurance and software assurance.

Section 243—Pilot Program on Collaborative Energy Security

This section would require the Secretary of Defense, in coordination with the Secretary of Energy, to carry out a collaborative energy security pilot program involving one or more partnerships between one military installation and one Department of Energy laboratory for the purpose of evaluating and validating secure microgrid components and systems for deployment.

TITLE III—OPERATION AND MAINTENANCE

OVERVIEW

The budget request contained $283.1 billion in operation and maintenance (O&M) funds to ensure that the Department of Defense can train, deploy, and sustain U.S. military forces. The fiscal year 2011 O&M request includes $167.9 billion in the base budget

and $115.2 billion for Overseas Contingency Operations (OCO). Some 37 percent of the total request is for OCO. The fiscal year 2011 request represents a $17.8 billion increase above the fiscal year 2010 request, including an increase of $11.5 billion in the base budget request.

The committee commends the Department for applying additional resources to the readiness accounts in fiscal year 2011 but notes that overall readiness remains tenuous. Repeated deployments, with limited dwell time, have reduced the ability of the forces to train across the full spectrum of conflict, increasing risk to national security if the military had to respond quickly to emergent contingencies. Because units are focused on deployment to the Republic of Iraq and the Islamic Republic of Afghanistan ahead of all other missions, skills not required for the fights in Iraq and Afghanistan have atrophied. It will take time to restore these skills once sufficient dwell time at home station is available.

The readiness levels of most non-deployed Army units remain low, due to a combination of equipment and personnel shortfalls and a lack of time to train. Like the Army, the Navy's next-to-deploy forces are reporting high levels of readiness, but this also comes at the expense of the non-deployed forces that experience fewer training opportunities as resources are prioritized toward meeting Global Force Management demands. Navy requirements to support non-standard missions and requests for individual augmentees continue to grow, reducing opportunities for Navy sailors and officers to train for core missions with a full complement of personnel.

The Marine Corps is experiencing equipment usage rates as much as seven times greater than peacetime rates, reducing the expected lifespan of gear. The pace and nature of ongoing operations in Iraq and Afghanistan have adversely affected Marine Corps readiness, as evidenced in the Marine Corps' overall readiness assessment, the reported readiness of next-to-deploy and non-deployed Marine units, and in the service's assessed ability to perform key warfighting functions. Non-deployed units are being used to satisfy equipment needs for deployed and next-to-deploy units.

The Air Force's overall readiness has remained at a relatively high level compared to the other services because it adopted a rotational model for deployment several years ago. However, Air Force readiness levels have declined significantly since 1995. While the Air Force maintained the highest readiness of all the services between 2004 and 2008, its readiness has declined since October 2008. Operational tempo, support of emergent mission sets, and an aging aircraft fleet remain the Air Force's top readiness concerns.

The budget request continues efforts begun in fiscal year 2010 to address readiness shortfalls by increasing training funding for all the active-duty forces. The fiscal year 2011 budget request contained funds to continue reset of equipment damaged or worn out through nine years of continuous combat operations. The committee notes, however, that the amount of the Army's depot maintenance budget request contained in the base budget remains alarmingly low (at 11.4 percent). The committee has the same concern for Marine Corps depot maintenance, where 86 percent of the total fiscal year 2011 budget request is contained in the OCO request.

With the fiscal year 2011 budget request, the Navy attempts a course correction to restore flying-hour funding in order to more correctly fund operational requirements and meet training goals for the Navy and Marine Corps. The committee notes, however, that the budget request contained a decrease in funding for Fleet Replacement Squadrons to 84 percent of the requirement against a goal of 94 percent, which Navy officials said represented "the best balance of resources to requirements." While the Air Force budget request represents a 7.3 percent increase over last year's request, a large portion of the increase can be attributed to inflation and cost growth, particularly driven by fuel prices.

To reduce budgetary risk to readiness in areas where the services have identified unfunded requirements, the committee recommends funding above the levels contained in the budget request. These areas include: Navy ship and aviation depot maintenance, naval aviation flight training, Air Force weapon system sustainment and support equipment, Army base operating services, Army Reserve depot maintenance, and contract and performance management and training.

As operations in Iraq and Afghanistan are expected to draw down over the next two fiscal years, the committee anticipates a realignment of funding from the Department's OCO request to the services' O&M base budgets. The committee understands that equipment reset and drawdown requirements will remain relatively high and steady for a number of succeeding years but expects the Department to migrate these baseline operations and sustainment costs to the O&M base budget in order to better represent the normalized budget requirements for the required force structure.