

*Applicability of previous teaming agreements for Virginia-class submarine program*

The House bill contained a provision (sec. 122) that would amend the multiyear contracting authority contained in section 121 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181) to require that the Secretary of the Navy certify that the contract to be awarded under such authority comports with the Team Agreement between the two submarine building yards, dated February 16, 1997, which was submitted to the Congress on March 31, 1997.

The Senate bill contained no similar provision.

The agreement does not include the House provision.

*Limitation on retiring C-5 aircraft*

The House bill contained a provision (sec. 131) that would repeal section 132 of the National Defense Authorization Act for Fiscal Year 2004 (Public Law 108–136) relating to a prohibition on retiring C-5A aircraft until certain testing had been completed. Instead, the provision would prohibit retiring C-5A aircraft until 45 days after the Secretary of the Air Force had submitted a certification that retiring aircraft would not increase operational risk, and a cost analysis assessing different approaches for meeting strategic airlift requirements.

The Senate bill contained no similar provision.

The agreement does not include the House provision.

## TITLE II—RESEARCH, DEVELOPMENT, TEST, AND EVALUATION

### BUDGET ITEMS

*Research, Development, Test and Evaluation overview*

The budget request included \$79.7 billion in Research, Development, Test and Evaluation for the Department of Defense.

The House bill would authorize \$79.8 billion.

The Senate bill would authorize \$79.8 billion.

The agreement would authorize \$77.8 billion.

Unless noted explicitly in the statement of managers, all changes are made without prejudice.

Title II -- RESEARCH, DEVELOPMENT, TEST & EVALUATION

	<u>Authorization Request</u>	<u>House Authorized</u>	<u>Senate Authorized</u>	<u>Agreement Change</u>	<u>Agreement Authorized</u>
Research, Development, Test & Evaluation, Army	10,524,085	10,685,695	10,855,210	419,755	10,943,840
Research, Development, Test & Evaluation, Navy	19,337,238	19,764,738	19,442,192	8,365	19,345,603
Research, Development, Test & Evaluation, Air Force	28,066,617	28,238,349	28,322,477	-1,777,109	26,289,508
Research, Development, Test & Evaluation, Defense-wide	21,499,229	20,822,879	20,924,729	-556,500	20,942,729
Operational Test & Evaluation	188,772	188,772	188,772	0	188,772
TOTAL, RDT&E	79,615,941	79,700,433	79,733,380	-1,905,489	77,710,452

**Title II - RDT&E**  
(Dollars in Thousands)

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		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVALUATION, ARMY</b>					
		<b>BASIC RESEARCH</b>					
0601101A	1	IN-HOUSE LABORATORY INDEPENDENT RESEARCH	19,832	19,832	19,832		19,832
0601102A	2	DEFENSE RESEARCH SCIENCES	176,959	183,439	184,459	9,980	186,939
		Advanced energy storage research			[3,000]	[2,000]	
		Drug resistant infections research			[1,500]	[1,500]	
		Military operating environments research			[1,500]	[1,500]	
		Organic semiconductor modeling and simulation			[1,500]	[1,000]	
		Functionally integrated reactive surface technologies		[2,500]			
		Nanostructured materials for photovoltaic applications		[2,000]			
		Solid state shelter lighting system		[480]			
		Nanocrystal source display		[1,500]			
0601103A	3	UNIVERSITY RESEARCH INITIATIVES	76,980	79,480	86,180	6,700	83,680
		Low temperature vehicle performance research			[2,000]	[2,000]	
		Nanocomposite materials research			[2,000]	[2,000]	
		Nanocomposite wireless power systems research			[1,500]		
		Nanoscale biosensor research			[2,500]	[1,500]	
		Urban simulation and training research			[1,200]		
		Science, tech, engineering, mathematics at Coppin State Program increase		[1,000]			
0601104A	4	UNIVERSITY AND INDUSTRY RESEARCH CENTERS	105,622	105,622	105,622		105,622
		<b>SUBTOTAL, BASIC RESEARCH, ARMY</b>	<b>379,393</b>	<b>388,373</b>	<b>396,093</b>	<b>16,680</b>	<b>396,073</b>

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0602105A	5	APPLIED RESEARCH Cold spray technology development Composite materials applied research and technology Improvised explosive device blast simulations Magnetic nanosensor development Nanosensor manufacturing research Aircraft skin repair-cold spray	26,985	31,685	36,660 [2,000] [2,000] [475] [2,000] [1,500]	6,975 [2,000] [475] [2,000] [1,000]	33,960
0602120A	6	SENSORS AND ELECTRONIC SURVIVABILITY Hydrogen battery research Dismounted soldier millimeter wave BTID RF tag Command, control, communications and computer module Electromagnetic geolocation Semi-autonomous or unattended psychop and recon tool Cyber forensics and tracking capability tool	46,147	56,477	[3,000] [1,700] 48,147 [2,000]	[1,500] 6,500 [2,000]	52,647
0602122A	7	TRACTOR HIP	18,192	18,192	18,192		18,192
0602211A	8	AVIATION TECHNOLOGY Slowed-rotor technologies	42,013	43,213	44,513 [2,500]	1,200	43,213
0602270A	9	Intensive quenching for advanced weapons systems ELECTRONIC WARFARE TECHNOLOGY Silver Fox and Manta UAS	16,611	[1,200] 23,611 [4,000]	16,611	[1,200] 2,500 [2,500]	19,111
0602303A	10	Knowledge integration & management center of excellence MISSILE TECHNOLOGY	48,174	[3,000] 50,674	48,174		48,174
0602307A	11	Micro safe and arm device for DOD rocket systems ADVANCED WEAPONS TECHNOLOGY	19,664	[2,500] 19,664	19,664		19,664

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0602308A	12	ADVANCED CONCEPTS AND SIMULATION Photonics research for sniper detection	17,048	17,048	20,048	3,000	20,048
0602601A	13	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY Advanced vehicle technology and fuel development Condition based maintenance simulation tools Ground vehicle reliability modeling Hybrid electric vehicle batteries for FCS Lightweight electric drive technologies Military fuels research program DOD hydrogen PEM fuel cell medium Nano-based, rust corrosion-UV protection system Fire resistant fuels Dual stage variable energy absorber (DSVEA) Glass ceramic armor technology for vehicle survivability Rapid up-armor synthesis and crashworthiness design Torque-vectoring rollover prevention technology Nanofluids for advanced mobility Tactical metal fabrication	55,234	89,234	73,234	24,000	79,234
0602618A	14	BALLISTICS TECHNOLOGY / ROBOTICS Unmanned rotorcraft for risk reduction - BIRRRD Globally accessible manufacturing and maintenance activity	71,550	76,550	71,550	3,000	74,550
0602622A	15	CHEMICAL, SMOKE AND EQUIPMENT DEFEATING TECHNOLOGY	2,295	2,295	2,295	[2,000]	2,295
0602623A	16	JOINT SERVICE SMALL ARMS PROGRAM	7,531	7,531	7,531		7,531
0602624A	17	WEAPONS AND MUNITIONS TECHNOLOGY UGV weaponization Compact automated mechanical clearance platform	30,576	33,576	34,076	3,500	34,076

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0602705A	18	ELECTRONICS AND ELECTRONIC DEVICES Soldier portable power pack technologies	45,278	45,278	47,278	2,000	47,278
0602709A	19	NIGHT VISION TECHNOLOGY Power efficient microdisplay development Multi-threat detection initiative (MTDI)	25,647	36,297 [4,650] [3,000]	[2,000] 25,647	[2,000] 1,500	27,147
0602712A	20	COUNTERMINE SYSTEMS Miniaturized sensors for small and tactical UAV Standoff IED detection technologies	21,815	26,815	24,815 [3,000]	[1,500] 8,000 [3,000]	29,815
0602716A	21	HUMAN FACTORS ENGINEERING TECHNOLOGY Hawaii undersea chem military munitions assessment plan	17,348	42,348 [5,000]	17,348	[5,000]	42,348
0602720A	22	ENVIRONMENTAL QUALITY TECHNOLOGY LWI training based collaborative initiative Range scrap disposal	16,064	22,314 [25,000] [1,250]	16,064	1,000 [1,000]	17,064
0602782A	23	COMMAND, CONTROL, COMMUNICATIONS TECHNOLOGY Integrated enviro control sys and cryogenic agent removal	24,014	24,014 [5,000]	26,014	2,000	26,014
0602783A	24	COMPUTER AND SOFTWARE TECHNOLOGY Portable compass/positioning/timing device development	5,495	5,495	[2,000]	[2,000]	5,495
0602784A	25	MILITARY ENGINEERING TECHNOLOGY Geosciences and atmospheric research	52,066	52,066	56,066	3,500	55,566
0602785A	26	MANPOWER/PERSONNEL/TRAINING TECHNOLOGY Nanocomposite panels for blast and ballistic protection	16,412	16,412	[1,500]	[1,500]	16,412
0602786A	27	WARFIGHTER TECHNOLOGY Ballistic materials for force protection Mobile feeding unit development Advanced thermal processing of packaged combat rations Wearable personal area network technology	21,948	27,048	24,948 [1,500] [1,500]	6,100 [1,000]	28,048
				[2,100] [3,000]		[2,100] [3,000]	

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0602787A	28	MEDICAL TECHNOLOGY	75,395	105,895	110,895	17,700	93,095
		Bioengineering research		[2,500]	[2,500]		
		Biomechanics research		[1,000]	[1,000]		
		Blast wave effect modeling		[5,000]	[5,000]		
		Dengue fever treatment research		[2,000]	[2,000]		
		Dried blood technology clinical research		[2,000]	[2,000]		
		Extremity war injuries research program		[5,000]	[5,000]		
		Genetics research for soldier survivability		[2,000]	[2,000]		
		PTSD research		[2,500]	[2,500]		
		Traumatic brain injury research		[3,500]	[3,500]		
		Bio-engineering for enhancement of soldier survivability		[3,000]			
		Adv functional nanomaterials for biological processes		[2,500]	[2,000]	[2,000]	
		Depression and mood disorders research		[1,000]			
		Pharmacologic agents to reduce hearing loss		[1,600]			
		Measuring and protecting against traumatic brain injury		[3,000]			
		Minimizing health effects of air toxics		[1,200]			
		Neuropsychiatric and post traumatic stress treatment		[1,200]			
		Orthopedic implant design and manufacturing		[2,000]			
		Plasma technology laboratory		[1,000]			
		Post traumatic stress disorder attention modification		[1,500]			
		Military photomedicine program		[6,000]	[8,000]	[3,500]	
		Program increase		[1,500]			
		<b>SUBTOTAL, APPLIED RESEARCH, ARMY</b>	<b>723,502</b>	<b>873,732</b>	<b>811,677</b>	<b>117,475</b>	<b>840,977</b>

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0603001A	29	ADVANCED TECHNOLOGY DEVELOPMENT WARFIGHTER ADVANCED TECHNOLOGY Biosensor controller systems development Ballistic precision aerial delivery system Novel flame retardant nylon fabrics	46,793	53,593 [4,800] [2,000]	50,293 [3,500]	9,600 [3,500] [4,600] [1,500]	56,393
0603002A	30	MEDICAL ADVANCED TECHNOLOGY Advanced fibrin dressings Battlefield tracheal intubation technologies Bioelectrics research Combat wound initiative Electronic vital signs monitoring Gulf War veterans' illnesses research Joint medical logistics modernization program Lower limb prosthetics research Mild traumatic brain injury assessment sensor research Online military medical training program Regenerative medicine research Center for traumatic injury to the visual sys and brain Controlled release of anti-inflammatory and tissue repair Corneal wound repair Cardiac surgery robotic computerized telemanipulation Chronic tinnitus treatment program Clinical technology integration for military health Composite tissue allotransplantation research Emergency department preparedness project Magnetic brain stimulation for traumatic brain injury rehab JI Med. Logistics AIT modernization init: Navy hospital ships Mild traumatic brain injury and triage using smart sensors	59,043	150,993	105,043 [5,000] [2,000] [2,000] [5,500] [3,000] [13,000] [4,000] [2,500] [2,000] [2,000] [5,000]	65,000 [3,000] [2,000] [2,000] [2,000] [3,000] [10,000] [2,000] [3,000] [3,000] [6,000] [5,500] [2,000] [1,000] [2,000]	124,043

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		Infectious and inflammatory disease center		[2,000]		[2,000]	
		Institute of surgical and interventional simulation		[3,000]		[3,000]	
		Locomotor translational for traumatic brain injury		[4,200]			
		National Trauma Institute		[3,000]			
		Terastack pilot for army telemedicine		[2,500]		[5,000]	
		Ultra-high resolution display		[5,200]			
		USF College of Public Health		[5,000]			
		Digital pen		[250]			
		Personal status monitor (Nightengale)		[2,500]		[2,500]	
		PTSD telemedicine support		[2,200]			
		Shock trauma center operating room equipment		[2,100]			
		Telepharmacy remote medicine device unit		[3,000]		[3,000]	
		Smission cartledge infuser		[2,000]			
		Ultra high-speed MEMS electromagnetic cell sorter		[5,500]		[3,000]	
		Program increase		[2,800]		[3,000]	
0603003A	31	AVIATION ADVANCED TECHNOLOGY	57,277	87,177	64,277	18,500	75,777
		Helicopter vulnerability reduction technologies			[1,500]	[1,500]	
		Tactical integration systems development			[3,500]	[2,000]	
		UAV payload delivery systems			[2,000]	[1,000]	
		Polymer matrix technology for rotorcraft drive systems		[5,000]		[3,000]	
		Mission execution technology implementation		[10,000]		[4,000]	
		Non-hazardous infrared anti-reflective coatings for sensors		[2,000]		[1,500]	
		Universal control - full authority digital engine control		[5,000]		[4,000]	
		Universal UAV-resupply BURRO		[4,800]		[1,500]	
		Advanced drive system laser-peening technologies		[3,100]			

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0603004A	32	WEAPONS AND MUNITIONS ADVANCED TECHNOLOGY	73,697	83,597	73,697	4,900	78,597
		Lens-less micro seeker sys for small steerable projectiles		[5,000]		[2,000]	
		Precision molding mantech for large IR aspheric optics		[2,900]		[2,900]	
		Chemical mechanical self-destruct fuze					
0603005A	33	COMBAT VEHICLE AND AUTOMOTIVE TECHNOLOGY	107,992	152,942	208,242	71,500	179,492
		Advanced battery development program			[10,000]		
		Advanced digital hydraulic hybrid drive systems		[3,500]		[2,500]	
		Advanced lithium vehicle battery systems		[3,000]		[2,000]	
		Advanced tactical wheeled vehicle electric drive systems		[5,000]		[3,000]	
		Advanced thermal and oil management controls research		[5,000]		[3,000]	
		Composite armor cab development		[2,000]			
		Development of logistical fuel processors		[3,500]		[2,800]	
		Diverse threat sensor development		[1,000]		[1,000]	
		Fastening & joining research		[2,000]			
		Ground vehicle integration technologies		[4,000]		[3,000]	
		Hostile fire detection systems		[2,500]		[2,000]	
		Hybrid electric blast protected vehicle technologies		[4,000]		[1,500]	
		Hybrid engine development program		[6,000]			
		Hydraulic hybrid vehicle systems		[3,000]		[1,000]	
		Next generation non-tactical vehicle propulsion technologies		[5,000]		[2,000]	
		Nickel metal hydride battery development		[2,000]			
		Power and energy research equipment upgrades		[12,000]		[6,000]	
		Power management control and integration systems		[2,000]		[1,000]	
		Solid hydrogen storage systems development		[1,000]		[1,000]	
		Unmanned ground vehicle initiative		[12,000]		[12,000]	
		Vehicle prognostics technologies		[3,500]			
		Fire shield		[6,000]		[4,000]	
		Long range power source for unmanned ground vehicles		[4,000]			

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		Comm. viable Si/C power semiconductors using superlattice		[3,200]		[3,200]	
		Li - iron phosphate battery system for Army hybrid HMMWV		[4,000]			
		Antiballistic windshield armor		[5,000]	[4,000]	[4,500]	
		Dynamometer facility upgrade program		[4,250]	[4,250]	[4,000]	
		Heavy duty hybrid electric vehicle		[5,000]		[3,000]	
		Advanced drivetrains for enhanced mobility and safety		[2,500]		[2,000]	
		Tac. wheeled vehicle condition based maintenance tech		[4,000]		[4,000]	
		Composites for light weight, low cost transportation sys		[5,000]		[3,000]	
		User evaluation of LASSO vehicles		[2,000]			
0603006A	34	COMMAND, CONTROL, COMMUNICATIONS ADVANCED TECHNOLOGY	9,183	9,183	9,183		9,183
0603007A	35	MANPOWER, PERSONNEL AND TRAINING ADVANCED TECHNOLOGY	6,853	6,853	6,853		6,853
0603008A	36	ELECTRONIC WARFARE ADVANCED TECHNOLOGY	50,961	58,961	50,961	5,000	55,961
		Applied communications and information networking		[7,000]		[4,000]	
		Maritime C4ISR system		[1,000]		[1,000]	
0603009A	37	TRACTOR HIKE	14,562	14,562	14,562		14,562
0603015A	38	NEXT GENERATION TRAINING & SIMULATION SYSTEMS	18,881	29,581	24,381	2,500	21,381
		Modeling architectures for battle command experimentation			[2,000]		
		Experiential tech for urban warfare and disaster response		[4,200]		[2,500]	
0603020A	39	TRACTOR ROSE	11,575	[6,500]	[3,500]		11,575
0603100A	40	IED DEFEAT TECHNOLOGY DEVELOPMENT	10,564	11,575	11,575		11,564
0603103A	41	EXPLOSIVES DEMILITARIZATION TECHNOLOGY		12,564	11,064	1,000	
		Deactivation of military explosives research		[2,000]	[500]		
0603105A	42	MILITARY HIV RESEARCH	7,116	7,116	7,116	[1,000]	7,116
		Unserviceable ammunition demil - Tooele Army Depot					

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0603125A	43	COMBATING TERRORISM, TECHNOLOGY DEVELOPMENT Army field test of solar power	13,064	15,064 [2,000]	13,064		13,064
0603238A	44	GLOBAL SURVEILLANCE/AIR DEFENSE/PRECISION STRIKE TECHNOLOGY DEMONSTRATION					
0603270A	45	ELECTRONIC WARFARE TECHNOLOGY Laser development for light aircraft missile defense	23,996	25,496	25,996 [2,000]		23,996
0603313A	46	MISSILE AND ROCKET ADVANCED TECHNOLOGY UWB-RWM for IED countermeasures	63,998	63,998 [1,500]	64,998 [1,000]	1,000 [1,000]	64,998
0603322A	47	TRACTOR CAGE	12,372	12,372	12,372		12,372
0603606A	48	LANDMINE WARFARE AND BARRIER ADVANCED TECHNOLOGY	30,797	30,797	30,797		30,797
0603607A	49	JOINT SERVICE SMALL ARMS PROGRAM Integrated fire control system for small arms	8,809	10,309 [1,500]	8,809		8,809
0603710A	50	NIGHT VISION ADVANCED TECHNOLOGY Short range electro-optic sensors	39,916	56,016 [5,400]	43,416 [2,000]	8,000 [2,000]	47,916
		Hyperspectral sensor for improved force protection		[5,400]			
		Video enhancement for night vision and low-light video		[2,000]			
		Personal miniature thermal viewer		[4,200]			
		Brownout situational awareness sensor		[4,500]			
0603728A	51	ENVIRONMENTAL QUALITY TECHNOLOGY DEMONSTRATIONS	15,519	15,519			15,519

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0603734A	52	MILITARY ENGINEERING ADVANCED TECHNOLOGY Direct methanol fuel cell development Fuel cell technologies for continuity of operations Enhanced holographic imager Distributed power from wastewater Synthetic automotive virtual environments	7,654	15,254	10,654 [2,000] [1,000]	5,800 [1,000] [2,800]	13,454
0603772A	53	ADVANCED TACTICAL COMPUTER SCIENCE AND SENSOR TECHNOLOGY Foliage penetrating radar (FORESTER) Software life cycle affordability management	48,236	54,736 [4,000] [2,500]	48,236	5,000 [4,000] [1,000]	53,236
		<b>SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT, ARMY</b>	<b>738,858</b>	<b>978,258</b>	<b>911,108</b>	<b>197,800</b>	<b>936,658</b>
0603024A	54	ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES UNIQUE ITEM IDENTIFICATION (UID) Unique item ID data management research	649	649	2,649 [2,000]		649
0603305A	55	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION(NON SPACE) Advanced electronics integration Advanced environmental control systems Advanced fuel cell research Radiation hardening initiative Compact pulsed power for defense applications Composite structure design Deployable space and electronic warfare analysis tool	14,005	24,505 [4,000] [2,500] [4,000]	29,505 [4,000] [5,000] [3,500] [3,000] [3,000] [3,000] [2,000] [1,000]	21,000 [4,000] [5,000] [3,000] [3,000] [3,000] [3,000] [2,000] [1,000]	35,005

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0603308A	56	ARMY MISSILE DEFENSE SYSTEMS INTEGRATION	19,986	19,986	22,986	3,000	22,986
		High-altitude integration testbed			[3,000]	[3,000]	
0603327A	57	AIR AND MISSILE DEFENSE SYSTEMS ENGINEERING	116,410	117,410	121,410		116,410
		IAMD architecture analysis program			[5,000]		
		Center for defense systems research		[1,000]			
0603460A	58	JOINT AIR-TO-GROUND MISSILE (JAGM)					
0603619A	59	LANDMINE WARFARE AND BARRIER - ADV DEV	29,234	29,234	29,234		29,234
0603627A	60	SMOKE, OBSCURANT AND TARGET DEFEATING SYS-ADV DEV	3,840	3,840	3,840		3,840
0603639A	61	TANK AND MEDIUM CALIBER AMMUNITION / FCS	45,866	45,866	45,866		45,866
0603653A	62	ADVANCED TANK ARMAMENT SYSTEM (ATAS)	108,012	118,212	112,512	3,500	111,512
		Stryker active protection system			[4,500]	[1,500]	
		Stryker common active protection system (APS) radar		[4,500]			
		Stryker family of vehicles research and development		[5,700]			
0603747A	63	SOLDIER SUPPORT AND SURVIVABILITY	30,716	32,716	30,716	2,000	32,716
		Headborne energy analysis and diagnostic sys (HEADS)		[2,000]		[2,000]	
0603766A	64	TACTICAL ELECTRONIC SURVEILLANCE SYSTEM - ADV DEV	12,275	12,275	12,275		12,275
0603774A	65	NIGHT VISION SYSTEMS ADVANCED DEVELOPMENT	2,588	2,588	2,588		2,588
0603779A	66	ENVIRONMENTAL QUALITY TECHNOLOGY	5,355	20,655	5,355	2,500	7,855
		Renewable Energy Testing Center				[2,000]	
		Mobile detection and response system		[5,500]			
		Lead environmental, energy, and transp. management		[500]			
		Green range and impact zone pilot program		[2,500]			
		Environmental management information sys at Travis AFB		[500]			
		Internet-based environmental compliance management sys		[2,500]			

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0603782A	67	WARFIGHTER INFORMATION NETWORK-TACTICAL WIN-T increment 3 reduction	414,357	381,257 [-33,100]	414,357	-33,100 [-33,100]	381,257
0603790A	68	NATO RESEARCH AND DEVELOPMENT	5,041	5,041	5,041		5,041
0603801A	69	AVIATION - ADV DEV	7,455	7,455	7,455		7,455
0603804A	70	LOGISTICS AND ENGINEER EQUIPMENT - ADV DEV	44,141	44,141	44,141		44,141
0603805A	71	COMBAT SERVICE SUPPORT CONTROL SYSTEM EVALUATION AND ANALYSIS	17,788	17,788	17,788		17,788
0603807A	72	MEDICAL SYSTEMS - ADV DEV	26,308	27,808	26,308	1,000	27,308
0603827A	73	SOLDIER SYSTEMS - ADVANCED DEVELOPMENT Leishmania skin test	36,558	16,558 [-20,000]	36,558	[1,000]	36,558
0603850A	74	INTEGRATED BROADCAST SERVICE	11,238	11,238	11,238		11,238
		<b>SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES, ARMY</b>	<b>951,822</b>	<b>939,222</b>	<b>981,822</b>	<b>-100</b>	<b>951,722</b>
		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>					
0603808A	75	CLASSIFIED PROGRAM	71,562	71,562	74,562		71,562
0604201A	76	AIRCRAFT AVIONICS Vibration management enhancement research			[3,000]		
0604220A	77	ARMED RECONNAISSANCE HELICOPTER (ARH)	135,652	135,652	135,652		135,652
0604270A	78	ELECTRONIC WARFARE DEVELOPMENT (MIP) Hostile fire indicator for rotorcraft	32,325	37,325 [5,000]	32,325	5,000 [5,000]	37,325
0604321A	79	ALL SOURCE ANALYSIS SYSTEM	16,465	16,465	16,465		16,465
0604328A	80	TRACTOR CAGE	16,807	16,807	16,807		16,807
0604329A	81	COMMON MISSILE					

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0604601A	82	INFANTRY SUPPORT WEAPONS Next generation helmet	42,414	42,414	45,414 [3,000]		42,414
0604604A	83	MEDIUM TACTICAL VEHICLES	1,949	1,949	1,949		1,949
0604609A	84	SMOKE OBSCURANT AND TARGET DEFEATING SYS	5,603	5,603	5,603		5,603
0604622A	85	FAMILY OF HEAVY TACTICAL VEHICLES Multi-purpose ISO container transporters	2,901	5,901 [3,000]	2,901		2,901
0604633A	86	AIR TRAFFIC CONTROL	14,214	14,214	14,214		14,214
0604642A	87	LIGHT TACTICAL WHEELED VEHICLES HMMWV modernization research			5,000 [5,000]		
0604645A	88	ARMORED SYSTEMS MODERNIZATION (ASM)-SDD					
0604646A	89	NON-LINE OF SIGHT LAUNCH SYSTEM	200,099	200,099	202,099 [2,000]		200,099
0604647A	90	NLOS-LS anti-tamper research	89,841	89,841	89,841		89,841
0604660A	91	NON-LINE OF SIGHT CANNON FCS MANNED GRD VEHICLES & COMMON GRD VEHICLE Program reduction	774,257	673,257	774,257		774,257
0604661A	92	FCS SYSTEMS OF SYSTEMS ENGR & PROGRAM MGMT Program reduction	1,413,945	1,281,945 [-101,000]	1,413,945		1,413,945
0604662A	93	FCS RECONNAISSANCE (UAV) PLATFORMS Program increase	34,379	49,379	34,379	15,000 [15,000]	49,379
0604663A	94	FCS UNMANNED GROUND VEHICLES Program increase	96,918	104,918 [8,000]	96,918	8,000 [8,000]	104,918
0604664A	95	FCS UNATTENDED GROUND SENSORS	12,967	12,967	12,967		12,967
0604665A	96	FCS SUSTAINMENT & TRAINING R&D	539,145	539,145	539,145		539,145
0604666A	97	MODULAR BRIGADE ENHANCEMENT Program increase	64,900	74,900 [10,000]	64,900	10,000 [10,000]	74,900
0604710A	98	NIGHT VISION SYSTEMS	44,508	44,508	44,508		44,508
0604713A	99	COMBAT FEEDING, CLOTHING, AND EQUIPMENT	2,499	2,499	2,499		2,499

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0604715A	100	NON-SYSTEM TRAINING DEVICES - SDD Urban training development	35,424	35,424	41,424	3,000	38,424
0604741A	101	AIR DEFENSE CZ AND INTELLIGENCE - (C-RAM)	22,415	22,415	22,415	[3,000]	22,415
0604742A	102	CONSTRUCTIVE SIMULATION SYSTEMS DEVELOPMENT	26,244	26,244	26,244		26,244
0604746A	103	AUTOMATIC TEST EQUIPMENT DEVELOPMENT	23,582	23,582	23,582		23,582
0604760A	104	DISTRIBUTIVE INTERACTIVE SIMULATIONS (DIS)	16,095	16,095	16,095		16,095
0604780A	105	COMBINED ARMS TACTICAL TRAINER (CATT) CORE	29,468	29,468	29,468		29,468
0604783A	106	JOINT NETWORK MANAGEMENT SYSTEM	676	676	676		676
0604802A	107	WEAPONS AND MUNITIONS - SDD Extended range sniper rifle research	52,140	52,140	55,140		52,140
0604804A	108	LOGISTICS AND ENGINEER EQUIPMENT	37,718	37,718	[3,000]		37,718
0604805A	109	COMMAND, CONTROL, COMMUNICATIONS SYSTEMS	9,795	9,795	37,718		9,795
0604807A	110	MEDICAL MATERIEL/MEDICAL BIOLOGICAL DEFENSE EQUIPMENT - SDD	34,971	37,971	9,795		35,971
0604808A	111	Rotary valve pressure swing absorption oxygen generator LANDMINE WARFARE/BARRIER (FCS)	126,475	[3,000]	34,971	1,000	35,971
0604812A	112	Landmine warfare barrier - SDD reduction CLASSIFIED PROGRAM		64,275	126,475	[1,000]	126,475
0604814A	113	ARTILLERY MUNITIONS / XM 982	[ ]	[-62,200]	[ ]		[ ]
0604817A	114	Realign to Excalibur projectile procurement COMBAT IDENTIFICATION	78,197	63,197	78,197		78,197
0604818A	115	ARMY TACTICAL COMMAND & CONTROL HARDWARE & SOFTWARE	10,909	[-15,000]	10,909		10,909
0604820A	116	RADAR DEVELOPMENT	67,535	67,535	67,535		67,535
0604822A	117	GENERAL FUND ENTERPRISE BUSINESS SYSTEM (GFEBS)	60,308	60,308	60,308		60,308
0604823A	118	FIREFINDER	47,845	47,845	47,845		47,845
0604827A	119	SOLDIER SYSTEMS - WARRIOR	15,790	15,790	15,790		15,790

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0604854A	120	ARTILLERY SYSTEMS	42,300	47,300	42,300		42,300
		M109A6 Paladin virtual sys development and modernization		[5,000]			
0604869A	121	PATRIOT/MEADS COMBINED AGGREGATE PROGRAM (CAP)	431,270	431,270	431,270		431,270
0604870A	122	NUCLEAR ARMS CONTROL MONITORING SENSOR NETWORK	6,260	6,260	6,260		6,260
0605013A	123	INFORMATION TECHNOLOGY DEVELOPMENT	73,740	76,740	73,740	2,500	76,240
		Health informatics initiative		[3,000]		[2,500]	
0605450A	124	JOINT AIR-TO-GROUND MISSILE (JAGM)	118,517	118,517	118,517		118,517
		<b>SUBTOTAL, SYSTEM DEVELOPMENT &amp; DEMONSTRATION, ARMY</b>	<b>4,981,024</b>	<b>4,722,824</b>	<b>5,003,024</b>	<b>44,500</b>	<b>5,025,524</b>
0603608A	125	RDT&E MANAGEMENT SUPPORT					
0604256A	126	CLASSIFIED PROGRAM					
0604256A	126	THREAT SIMULATOR DEVELOPMENT	21,416	21,416	21,416		21,416
0604256A	127	TARGET SYSTEMS DEVELOPMENT	13,498	13,498	16,498		13,498
		Fixed-wing aerial target development			[3,000]		
0604759A	128	MAJOR T&E INVESTMENT	64,618	64,618	64,618		64,618
0604812A	129	CLASSIFIED PROGRAM					
0605103A	130	RAND ARROYO CENTER	16,339	19,339	16,339	3,000	19,339
		Program increase		[3,000]		[3,000]	
0605301A	131	ARMY KWAJALEIN ATOLL	174,601	174,601	174,601		174,601
0605326A	132	CONCEPTS EXPERIMENTATION PROGRAM	28,271	40,271	28,271	1,000	29,271
		Warfighting study of future technologies and tactics - Aviation		[3,000]			
		Gunfire detection system for unmanned aerial vehicles		[9,000]			
0605502A	133	SMALL BUSINESS INNOVATIVE RESEARCH		5,000			
		Electro-magnetic flak impulse system		[5,000]		[1,000]	

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0605601A	134 ARMY TEST RANGES AND FACILITIES	342,079	342,079	342,079		342,079
0605602A	135 ARMY TECHNICAL TEST INSTRUMENTATION AND TARGETS	74,624	77,624	77,624	4,500	79,124
	LIDAR and modeling improvements			[3,000]	[3,000]	
	MOTS all sky imager (MASi)		[3,000]		[1,500]	
0605604A	136 SURVIVABILITY/LETHALITY ANALYSIS	41,066	41,066	41,066		41,066
0605605A	137 DOD HIGH ENERGY LASER TEST FACILITY HELSTF	2,835	2,835	17,835	5,000	7,835
				[15,000]	[5,000]	
0605606A	138 AIRCRAFT CERTIFICATION	5,054	5,054	5,054		5,054
0605702A	139 METEOROLOGICAL SUPPORT TO RDT&E ACTIVITIES	8,289	8,289	8,289		8,289
0605706A	140 MATERIEL SYSTEMS ANALYSIS	17,028	17,028	17,028		17,028
0605709A	141 EXPLOITATION OF FOREIGN ITEMS	3,530	3,530	3,530		3,530
0605712A	142 SUPPORT OF OPERATIONAL TESTING	72,942	72,942	72,942		72,942
0605716A	143 ARMY EVALUATION CENTER	63,382	63,382	63,382		63,382
0605718A	144 SIMULATION & MODELING FOR ACQ, RQTS, & TNG (SMART)	5,325	5,325	5,325		5,325
0605801A	145 PROGRAMWIDE ACTIVITIES	73,748	73,748	73,748		73,748
0605803A	146 TECHNICAL INFORMATION ACTIVITIES	42,905	42,905	42,905		42,905
0605805A	147 MUNITIONS STANDARDIZATION, EFFECTIVENESS AND SAFETY	20,857	20,857	20,857		20,857
0605857A	148 ENVIRONMENTAL QUALITY TECHNOLOGY MGMT SUPPORT	5,125	5,125	5,125		5,125

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0605898A	149 MANAGEMENT HQ - R&D	15,665	15,665	15,665		15,665
0909999A	150 FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS					
	<b>SUBTOTAL, RDT&amp;E MANAGEMENT SUPPORT, ARMY</b>	<b>1,113,197</b>	<b>1,136,197</b>	<b>1,134,197</b>	<b>13,500</b>	<b>1,126,697</b>
	<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>					
0603778A	151 MLRS PRODUCT IMPROVEMENT PROGRAM	59,749	59,749	59,749		59,749
0603820A	152 WEAPONS CAPABILITY MODIFICATIONS UAV					
0102419A	153 AEROSTAT JOINT PROJECT OFFICE	356,434	356,434	356,434		356,434
0203726A	154 ADV FIELD ARTILLERY TACTICAL DATA SYSTEM	15,860	17,360	15,860	1,000	16,860
	Fire support technology improvement program		[1,500]		[1,000]	
0203735A	155 COMBAT VEHICLE IMPROVEMENT PROGRAMS	141,114	146,914	141,114	3,000	144,114
	Condition based maintenance for military vehicles		[1,000]			
	Ground combat systems electronic enhancements		[4,800]		[3,000]	
0203740A	156 MANEUVER CONTROL SYSTEM	37,151	37,151	37,151		37,151
0203744A	157 AIRCRAFT MODIFICATIONS/PRODUCT IMPROVEMENT PROGRAMS	452,787	452,787	452,787		452,787
0203752A	158 AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	332	332	332		332
0203758A	159 DIGITIZATION	9,534	9,534	9,534		9,534
0203759A	160 FORCE XXI BATTLE COMMAND, BRIGADE AND BELOW (FBCB2)	38,418	38,418	38,418		38,418
0203764A	161 TACTICAL WHEELED VEHICLE IMPROVEMENT PROGRAM					
0203801A	162 MISSILE/AIR DEFENSE PRODUCT IMPROVEMENT PROGRAM	37,871	37,871	37,871		37,871

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0203802A	163	OTHER MISSILE PRODUCT IMPROVEMENT PROGRAMS Javelin modernization	1,527	16,527	11,527	3,700	5,227
		Close combat missile modernization (Javelin)		[10,000]	[10,000]	[3,700]	
		Program increase		[5,000]			
0203808A	164	TRACTOR CARD	19,601	19,601	19,601		19,601
0208010A	165	JOINT TACTICAL COMMUNICATIONS PROGRAM (TRI-TAC)	920	920	920		920
0208053A	166	JOINT TACTICAL GROUND SYSTEM	1,957	7,957	1,957		1,957
		JTAGS preplanned product improvement		[5,000]			
0208058A	167	JOINT HIGH SPEED VESSEL (JHSV)	2,936	2,936	2,936		2,936
0301359A	168	SPECIAL ARMY PROGRAM	[ ]	[ ]	[ ]		[ ]
0303028A	169	SECURITY AND INTELLIGENCE ACTIVITIES					
0303140A	170	INFORMATION SYSTEMS SECURITY PROGRAM	38,090	38,090	38,090		38,090
0303141A	171	GLOBAL COMBAT SUPPORT SYSTEM	104,934	98,934	64,934		104,934
		GCSS			[-30,000]		
		PLM+			[-10,000]		
		Multi-band integrated SATCOM terminal					
0303142A	172	SATCOM GROUND ENVIRONMENT (SPACE)	106,327	66,327	106,327		106,327
0303150A	173	WWMCCS/GLOBAL COMMAND AND CONTROL SYSTEM	12,922	11,922	12,922		12,922
		Global Command and Control System Army		[-1,000]			
0303158A	174	JOINT COMMAND AND CONTROL PROGRAM (JC2)	15,203	15,203	15,203		15,203
0305204A	175	TACTICAL UNMANNED AERIAL VEHICLES	50,976	50,976	50,976		50,976
0305206A	176	AIRBORNE RECONNAISSANCE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305208A	177	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	57,704	74,204	57,704	8,500	66,204
		Blast damage assess. risk analysis and mitigation app		[4,000]		[1,000]	
		Constant look operational support environment (CLOSE)		[4,000]		[2,000]	
		Asymmetric threat response and analysis (ATRAP)		[5,000]		[3,000]	
		Heuristic internet protocol packet inspection engine		[3,500]		[2,500]	
0702239A	178	AVIONICS COMPONENT IMPROVEMENT PROGRAM	1,023	1,023	1,023		1,023

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0708045A	179	END ITEM INDUSTRIAL PREPAREDNESS ACTIVITIES	69,084	82,084	80,084	13,700	82,784
		Castings research for weapons systems			[3,500]	[2,000]	
		Manufacturing metrology research			[3,000]	[2,200]	
		Nanotechnology manufacturing research			[2,500]	[2,000]	
		Near-net shaped body armor plate development		[4,000]	[2,000]	[2,000]	
		Vehicle common armor manufacturing process (VCAMP)		[4,000]		[2,500]	
		Composite rotorcraft airframe development		[2,000]			
		Helicopter vulnerability reduction		[3,000]			
1001018A	180	NATO JOINT STARS					
		<b>SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT, ARMY</b>	<b>1,632,454</b>	<b>1,643,254</b>	<b>1,613,454</b>	<b>29,900</b>	<b>1,662,354</b>
	999	CLASSIFIED PROGRAMS	3,835	3,835	3,835		3,835
		<b>Total, RDT&amp;E Army</b>	<b>10,524,085</b>	<b>10,685,695</b>	<b>10,855,210</b>	<b>419,755</b>	<b>10,943,840</b>

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	<b>RESEARCH, DEVELOPMENT, TEST &amp; EVALUATION, NAVY</b>					
	<b>BASIC RESEARCH</b>					
0601103N	1 UNIVERSITY RESEARCH INITIATIVES	103,707	110,707	106,207	2,500	106,207
	Automated technology for landmine detection			[1,500]	[1,500]	
	Radiation hardened electronic systems			[1,000]	[1,000]	
	Ship model testing facility		[7,000]			
0601152N	2 IN-HOUSE LABORATORY INDEPENDENT RESEARCH	17,298	17,298	17,298		17,298
0601153N	3 DEFENSE RESEARCH SCIENCES	407,271	410,271	413,771	6,500	413,771
	Energetics research			[1,500]		
	Manufacturing engineering educational outreach program			[2,000]	[2,000]	
	Quantum studies research			[1,500]	[1,500]	
	S&T educational outreach programs			[1,500]		
	Energetics S&T workforce		[3,000]		[3,000]	
	<b>SUBTOTAL, BASIC RESEARCH, NAVY</b>	<b>528,276</b>	<b>538,276</b>	<b>537,276</b>	<b>9,000</b>	<b>537,276</b>
	<b>APPLIED RESEARCH</b>					
0602114N	4 POWER PROJECTION APPLIED RESEARCH	79,913	83,813	87,413	8,500	88,413
	Free electron laser development			[3,500]	[3,000]	
	High brightness electron source development			[1,500]		
	UAV fuel cell technologies			[2,500]	[2,000]	
	High energy conventional energetics		[1,500]		[1,500]	
	Marine mammal hearing and echolocation research		[2,400]		[2,000]	

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0602123N	5	FORCE PROTECTION APPLIED RESEARCH Energy systems integration research Infrared materials research Novel coating technologies for military equipment Port security technologies SOF combatant signature and weight performance research Towed array systems M&S Optical recognition protocol for biologics detection Composite Sea Lion craft project Medium voltage distribution employing high fidelity tech Autonomous superconducting fault current limiting sys	131,310	146,510	151,810	14,000	145,310
					[3,000]	[3,000]	
					[3,000]	[3,500]	
					[3,500]	[3,500]	
					[2,000]	[2,000]	
					[2,500]		
					[3,000]	[2,000]	
0602131M	6	MARINE CORPS LANDING FORCE TECHNOLOGY Warfighter rapid awareness processing technology	36,480	40,480	40,980	4,000	40,480
0602234N	7	MATERIALS, ELECTRONICS AND COMPUTER TECHNOLOGY Infrared materials laboratories		3,000	[4,500]	2,500	2,500
0602235N	8	COMMON PICTURE APPLIED RESEARCH Test environment for adv team collaboration missions All-weather sense and avoid for UAVs	77,054	81,554	77,054	4,500	81,554
0602236N	9	WARFIGHTER SUSTAINMENT APPLIED RESEARCH Acoustic research detachment test support upgrades Remote fuel assessment system	93,862	95,862	95,362	1,500	95,362
0602271N	10	RF SYSTEMS APPLIED RESEARCH RF power technologies Center for hetero-functional materials	54,830	55,830	56,330	2,500	57,330
0602435N	11	OCEAN WARFIGHTING ENVIRONMENT APPLIED RESEARCH Autonomous undersea vehicle applications center	47,278	49,278	47,278	[1,500]	47,278
0602651M	12	JOINT NON-LETHAL WEAPONS APPLIED RESEARCH	6,084	6,084	6,084	[1,000]	6,084

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0602747N	13	UNDERSEA WARFARE APPLIED RESEARCH	58,658	58,658	58,658		58,658
0602782N	14	MINE AND EXPEDITIONARY WARFARE APPLIED RESEARCH	47,869	47,869	47,869		47,869
		<b>SUBTOTAL, APPLIED RESEARCH, NAVY</b>	<b>633,338</b>	<b>668,938</b>	<b>668,838</b>	<b>37,500</b>	<b>670,838</b>
		<b>ADVANCED TECHNOLOGY DEVELOPMENT</b>					
0603114N	15	POWER PROJECTION ADVANCED TECHNOLOGY	60,360	79,060	66,360	8,200	68,560
		Mobile target tracking technologies			[3,500]	[3,000]	
		Watercraft APS			[2,500]		
		Hyperspectral targeting sensor		[3,000]		[3,000]	
		Countermine LIDAR UAV-based system (CLUBS)		[2,200]		[1,200]	
		Free space optical communications interrogator		[6,000]			
		Electromagnetic railgun program		[5,000]			
		High speed anti-radiation demonstrator		[2,500]		[1,000]	

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0603123N	16	FORCE PROTECTION ADVANCED TECHNOLOGY	55,099	84,399	76,599	16,300	71,399
		Combined mishap reduction system			[2,000]		
		Integrated vehicle health monitoring system			[3,500]	[2,000]	
		Navy/USMC fuel cell non-tactical vehicle initiative			[5,000]	[2,000]	
		Single generator operations lithium ion battery			[9,000]	[5,000]	
		Wide band gap semiconductor materials			[2,000]		
		Sea fighter		[10,000]			
		High strength flame resistant LCP reinforced netting		[3,000]		[2,000]	
		Superconducting DC homopolar motor		[2,000]		[2,000]	
		Multi-fuel combustor for shipboard fuel cell systems		[3,000]		[2,000]	
		Power node switching and control center		[1,000]		[1,000]	
		Repair cell/engineering education outreach program		[4,300]		[4,300]	
		Integrated ship and motion control technology		[4,000]			
		Pure hydrogen supply from logistic fuels		43,378		-61,200	43,378
0603235N	17	COMMON PICTURE ADVANCED TECHNOLOGY	104,578	43,378			
		High integrity global positioning systems (HIGPS)		[-61,200]		[-61,200]	
0603236N	18	WARFIGHTER SUSTAINMENT ADVANCED TECHNOLOGY	112,520	126,320	112,520	1,000	113,520
		Helo ruggedized avionics displays		[6,800]			
		System for intelligent task assignment & readiness		[3,000]		[1,000]	
		Deployed ASW sustainment training		[4,000]			
0603271N	19	RF SYSTEMS ADVANCED TECHNOLOGY	37,058	37,058	37,058		37,058
0603640M	20	USMC ADVANCED TECHNOLOGY DEMONSTRATION (ATD)	100,787	111,287	102,787	3,500	104,287
		Acoustic combat sensors			[2,000]	[2,000]	
		Sniper defeat and combat situational awareness		[8,500]			
		Ballistic helmet development		[1,500]		[1,500]	
		New class of backpacks for marine electricity independence		[500]			
0603651M	21	JOINT NON-LETHAL WEAPONS TECHNOLOGY DEVELOPMENT	11,020	11,020	11,020		11,020

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0603729N	22	WARFIGHTER PROTECTION ADVANCED TECHNOLOGY	12,129	12,129	12,129		12,129
0603747N	23	UNDERSEA WARFARE ADVANCED TECHNOLOGY Navy - use of UNOLS fleet	81,490	83,990 [2,500]	81,490		81,490
0603758N	24	NAVY WARFIGHTING EXPERIMENTS AND DEMONSTRATIONS	70,216	70,216	70,216		70,216
0603782N	25	MINE AND EXPEDITIONARY WARFARE ADVANCED TECHNOLOGY	33,426	33,426	33,426		33,426
		<b>SUBTOTAL - ADVANCED TECHNOLOGY DEVELOPMENT, NAVY</b>	<b>678,683</b>	<b>692,283</b>	<b>646,983</b>	<b>-32,200</b>	<b>646,483</b>
<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>							
0603207N	26	AIR/OCEAN TACTICAL APPLICATIONS	66,133	66,133	66,133		66,133
0603216N	27	AVIATION SURVIVABILITY Trigger and alert sonobuoy system	5,917	12,117 [2,500]	5,917	2,500 [2,500]	8,417
0603237N	28	DEPLOYABLE JOINT COMMAND AND CONTROL Port and harbor security enhancement - AUV platforms	5,905	5,905	5,905		5,905
0603254N	29	ASW SYSTEMS DEVELOPMENT Marine mammal awareness, alert and response systems	28,799	42,999 [6,000]	28,799	6,200 [3,000]	34,999
0603261N	30	TACTICAL AIRBORNE RECONNAISSANCE Tactical E-field buoy development	4,298	4,298 [1,200]	4,298		4,298
0603382N	31	ADVANCED COMBAT SYSTEMS TECHNOLOGY Holographic optical filters for LIDAR	4,367	4,367	4,367		4,367
0603502N	32	SURFACE AND SHALLOW WATER MINE COUNTERMEASURES	119,164	119,164	119,164		119,164
0603506N	33	SURFACE SHIP TORPEDO DEFENSE	49,171	49,171	49,171		49,171

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0603512N	34	CARRIER SYSTEMS DEVELOPMENT Improved corrosion protection for EMALS	120,511	123,511	120,511	3,000	123,511
0603513N	35	SHIPBOARD SYSTEM COMPONENT DEVELOPMENT DDG-51 permanent magnet hybrid electric propulsion High temperature superconducting (HTS) propulsion motor Power conversion - high density power generation pkgs Data acquisition reporting and trending system (DARTS) Diagnostic/prognostic pump system High temp superconductor propulsion motor; DDG & CG(X) IR LED free space optics communications advancement	4,003	14,503	17,103	[6,600]	14,103
0603525N	36	PILOT FISH	86,017	86,017	86,017		86,017
0603527N	37	RETRACT LARCH	93,078	93,078	93,078		93,078
0603536N	38	RETRACT JUNIPER	159,175	159,175	159,175		159,175
0603542N	39	RADIOLOGICAL CONTROL	1,094	1,094	1,094		1,094
0603553N	40	SURFACE ASW Connectory expansion for rapid ID of tech sources Sonobuoy flight vehicle	29,574	33,474	29,574	500	30,074
0603559N	41	SSGN CONVERSION		[1,300]		[500]	
0603561N	42	ADVANCED SUBMARINE SYSTEM DEVELOPMENT Continue SSBN(X) design & study activities SSGN/Virginia payload tube development HBCU applied research incubator Sea based strategic deterrent (UMLS)	141,720	170,220	156,720	4,000	145,720
0603562N	43	SUBMARINE TACTICAL WARFARE SYSTEMS	10,212	10,212	10,212		10,212
0603563N	44	SHIP CONCEPT ADVANCED DESIGN Analytics for shipboard monitoring systems (ASMS)	31,111	32,111	31,111	1,000	32,111
0603564N	45	SHIP PRELIMINARY DESIGN & FEASIBILITY STUDIES Naval ship hydrodynamic test facilities, NSWCC, Carderock	14,627	24,627	14,627	5,000	19,627

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0603570N	46	ADVANCED NUCLEAR POWER SYSTEMS	158,270	158,270	158,270		158,270
0603573N	47	ADVANCED SURFACE MACHINERY SYSTEMS					
0603576N	48	CHALK EAGLE	352,858	352,858	352,858		352,858
0603581N	49	LITTORAL COMBAT SHIP (LCS)	371,008	371,008	371,008		371,008
0603582N	50	COMBAT SYSTEM INTEGRATION	54,401	54,401	54,401		54,401
0603609N	51	CONVENTIONAL MUNITIONS	8,124	8,124	8,124		8,124
0603611M	52	MARINE CORPS ASSAULT VEHICLES / EFV	316,052	275,852	316,052	-35,000	281,052
		Marine Corps assault vehicle reduction		[-40,200]		[-35,000]	
0603612M	53	USMC MINE COUNTERMEASURES SYSTEMS - ADV DEV	59,049	66,049	59,049	2,000	61,049
0603635M	54	USMC GROUND COMBAT/SUPPORT SYSTEM / JLTV		[1,000]			
		Center for geospatial intelligence and investigation		[6,000]		[2,000]	
		Urban operations laboratory		115,086	115,086		115,086
0603654N	55	JOINT SERVICE EXPLOSIVE ORDNANCE DEVELOPMENT	115,086	115,086	115,086		115,086
0603658N	56	COOPERATIVE ENGAGEMENT	38,316	38,316	38,316		38,316
0603713N	57	OCEAN ENGINEERING TECHNOLOGY DEVELOPMENT	7,737	7,737	7,737		7,737
0603721N	58	ENVIRONMENTAL PROTECTION	19,632	19,632	19,632		19,632
0603724N	59	NAVY ENERGY PROGRAM	5,611	5,611	5,611		5,611
0603725N	60	FACILITIES IMPROVEMENT	4,086	20,286	6,086	12,000	16,086
		Critical components for ocean alternate energy options		[2,500]		[2,500]	
		Wave energy powerbuoy generating system		[3,500]		[2,000]	
		Swimmer detection sonar network - PNS		[5,500]		[4,000]	
		Hydrokinetic power generator		[2,000]	[2,000]	[2,000]	
		Regenerative fuel cell back-up power		[2,700]		[1,500]	
0603734N	61	CHALK CORAL	117,543	117,543	117,543		117,543
0603739N	62	NAVY LOGISTIC PRODUCTIVITY	2,846	3,846	6,846	2,000	4,846
		Highly integrated optical interconnect for military avionics			[4,000]	[2,000]	
		In transit visibility system		[1,000]			
0603746N	63	RETRACT MAPLE	138,091	138,091	138,091		138,091

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0603748N	64	LINK PLUMERIA	60,444	60,444	60,444		60,444
0603751N	65	RETRACT ELM	139,139	139,139	139,139		139,139
0603755N	66	SHIP SELF DEFENSE	11,001	11,001	11,001		11,001
0603764N	67	LINK EVERGREEN	75,995	75,995	75,995		75,995
0603787N	68	SPECIAL PROCESSES	60,678	60,678	60,678		60,678
0603790N	69	NATO RESEARCH AND DEVELOPMENT	10,129	10,129	10,129		10,129
0603795N	70	LAND ATTACK TECHNOLOGY	40,028	16,228	10,028	-16,000	24,028
		Reflect cancellation of ERGM development					
		Affordable weapons system		[15,000]		[14,000]	
		Extended range guided munition program delay		[-38,800]		[-30,000]	
0603851M	71	NONLETHAL WEAPONS	46,902	46,902	46,902		46,902
0603860N	72	JOINT PRECISION APPROACH AND LANDING SYSTEMS	99,929	99,929	99,929		99,929
0603879N	73	SINGLE INTEGRATED AIR PICTURE (SIAP) SYSTEM ENGINEER (SE)	41,807	41,807	41,807		41,807
0603889N	74	COUNTERDRUG RDT&E PROJECTS		1,500			
		CRISSTL ball		[1,500]			
0603925N	75	DIRECTED ENERGY AND ELECTRIC WEAPON SYSTEMS			10,700	2,200	2,200
		Develop directed energy weapons for asymmetric threats			[10,700]	[2,200]	
0604272N	76	TACTICAL AIR DIRECTIONAL INFRARED	63,244	67,744	63,244	2,000	65,244
		Compact ultra-fast laser system development		[4,500]		[2,000]	
0604327N	77	HARD AND DEEPLY BURIED TARGET DEFEAT SYSTEM (HDBTDS) PROGRAM					
0604450N	78	JOINT AIR-TO-GROUND MISSILE (JAGM)		47,518	47,518		47,518
0604707N	79	SPACE AND ELECTRONIC WARFARE (SEW) ARCHITECTURE/ENGINEERING SUPPORT					
		<b>SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES, NAVY</b>	<b>3,440,400</b>	<b>3,483,900</b>	<b>3,455,200</b>	<b>1,500</b>	<b>3,441,900</b>

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		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>					
0604212N	80	OTHER HELO DEVELOPMENT	58,210	58,210	58,210		58,210
0604214N	81	AV-8B AIRCRAFT - ENG DEV	29,924	29,924	29,924		29,924
0604215N	82	STANDARDS DEVELOPMENT	71,920	73,920	71,920	2,000	73,920
		Navy METCAL		[2,000]			
0604216N	83	MULTI-MISSION HELICOPTER UPGRADE DEVELOPMENT	70,329	70,329	70,329		70,329
0604218N	84	AIR/OCEAN EQUIPMENT ENGINEERING	5,750	5,750	5,750		5,750
0604221N	85	P-3 MODERNIZATION PROGRAM	3,589	3,589	3,589		3,589
0604230N	86	WARFARE SUPPORT SYSTEM	8,611	13,611	8,611		8,611
		Wireless imaging and sensor - AT force protection initiative		[5,000]			
0604231N	87	TACTICAL COMMAND SYSTEM	128,742	127,742	128,742	-1,000	127,742
		Global Command and Control System Maritime		[-1,000]			
0604234N	88	ADVANCED HAWKEYE	484,159	484,159	484,159		484,159
0604245N	89	H-1 UPGRADES	3,795	3,795	3,795		3,795
0604261N	90	ACOUSTIC SEARCH SENSORS	45,790	45,790	45,790		45,790
0604262N	91	V-22A	68,763	68,763	68,763		68,763
0604264N	92	AIR CREW SYSTEMS DEVELOPMENT	16,192	16,192	16,192		16,192
0604269N	93	EA-18	128,906	128,906	128,906		128,906
0604270N	94	ELECTRONIC WARFARE DEVELOPMENT	106,932	106,932	106,932		106,932

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0604273N	95	VH-71A EXECUTIVE HELO DEVELOPMENT Increment II	1,047,835	1,047,835	1,047,835	-212,835 [-212,835]	835,000
0604280N	96	JOINT TACTICAL RADIO SYSTEM - NAVY (JTRS-NAVY)	834,650	834,650	834,650		834,650
0604300N	97	SC-21 TOTAL SHIP SYSTEM ENGINEERING Reduce CG(X) R&D to reflect delay in program decisions	678,936	678,936	591,736 [-87,200]		678,936
0604307N	98	SURFACE COMBATANT COMBAT SYSTEM ENGINEERING DDG-51 class permanent magnet hybrid electric propulsion	188,500	191,500 [3,000]	188,500	3,000 [3,000]	191,500
0604311N	99	LPD-17 CLASS SYSTEMS INTEGRATION	985	985	985		985
0604329N	100	SMALL DIAMETER BOMB (SDB)	19,574	19,574	19,574		19,574
0604366N	101	STANDARD MISSILE IMPROVEMENTS	234,653	234,653	234,653		234,653
0604373N	102	AIRBORNE MCM	39,882	39,882	39,882		39,882
0604378N	103	NAVAL INTEGRATED FIRE CONTROL - COUNTER AIR SYSTEMS ENGINEERING	10,533	10,533	10,533		10,533
0604501N	104	ADVANCED ABOVE WATER SENSORS Reduce CG(X) R&D to reflect delay in program decisions	153,558	158,558	119,958 [-33,600]	5,000 [5,000]	158,558
0604503N	105	SSN-688 AND TRIDENT MODERNIZATION Improved towed array handler	143,453	143,453	147,553 [4,100]		143,453
0604504N	106	AIR CONTROL	8,191	8,191	8,191		8,191
0604512N	107	SHIPBOARD AVIATION SYSTEMS	42,843	42,843	42,843		42,843
0604518N	108	COMBAT INFORMATION CENTER CONVERSION	14,792	14,792	14,792		14,792
0604558N	109	NEW DESIGN SSN Submarine electronic chart updates	167,357	169,357	172,657 [5,300]	2,000 [2,000]	169,357
0604561N	110	SSN-21 DEVELOPMENTS Large scale demonstration item for VA-Class bow dome		[2,000]			
0604562N	111	SUBMARINE TACTICAL WARFARE SYSTEM	58,592	58,592	58,592		58,592



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	129	MULTINATIONAL INFORMATION SHARING (MNIS)					
0605172N	130	CH-53K RDTE	570,484	570,484	570,484		570,484
0605430N	131	C/KC-130 AVIONICS MODERNIZATION PROGRAM (AMP)	24,407	24,407	24,407		24,407
0605450N	132	JOINT AIR-TO-GROUND MISSILE (JAGM)	62,324	62,324	62,324		62,324
0605500N	133	MULTI-MISSION MARITIME AIRCRAFT (MMA)	1,132,026	1,132,026	1,132,026		1,132,026
0304785N	134	TACTICAL CRYPTOLOGIC SYSTEMS	16,678	16,678	16,678		16,678
		<b>SUBTOTAL SYSTEM DEVELOPMENT &amp; DEMONSTRATION, NAVY</b>	<b>8,682,052</b>	<b>9,042,752</b>	<b>8,813,252</b>	<b>71,265</b>	<b>8,753,317</b>
		<b>RD&amp;E MANAGEMENT SUPPORT</b>					
0604256N	135	THREAT SIMULATOR DEVELOPMENT	24,959	24,959	24,959		24,959
0604258N	136	TARGET SYSTEMS DEVELOPMENT	80,337	80,337	80,337		80,337
0604759N	137	MAJOR T&E INVESTMENT	42,391	48,891	42,391	4,500	46,891
		Air combat enviro test and evaluation facility upgrades		[3,000]		[3,000]	
		Improved interoperability to support NAVAIR and GWOT		[1,500]		[1,500]	
		SURETRAK re-architecture and sensor augmentation		[2,000]			
0605152N	138	STUDIES AND ANALYSIS SUPPORT - NAVY	8,084	8,084	8,084		8,084
0605154N	139	CENTER FOR NAVAL ANALYSES	49,745	49,745	49,745		49,745
0605155N	140	FLEET TACTICAL DEVELOPMENT					
0605502N	141	SMALL BUSINESS INNOVATIVE RESEARCH					
0605804N	142	TECHNICAL INFORMATION SERVICES	713	713	713		713
0605853N	143	MANAGEMENT, TECHNICAL & INTERNATIONAL SUPPORT	51,568	51,568	51,568		51,568
0605856N	144	STRATEGIC TECHNICAL SUPPORT	3,597	3,597	3,597		3,597
0605861N	145	RD&E SCIENCE AND TECHNOLOGY MANAGEMENT	69,913	69,913	69,913		69,913
0605862N	146	RD&E INSTRUMENTATION MODERNIZATION					
0605863N	147	RD&E SHIP AND AIRCRAFT SUPPORT	195,017	195,017	195,017		195,017

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0605864N	148	TEST AND EVALUATION SUPPORT Unjustified request	356,254	356,254	346,254 [-10,000]		356,254
0605865N	149	OPERATIONAL TEST AND EVALUATION CAPABILITY	12,195	12,195	12,195		12,195
0605866N	150	NAVY SPACE AND ELECTRONIC WARFARE (SEW) SUPPORT	2,708	2,708	2,708		2,708
0605867N	151	LINK CRIMSON	25,358	25,358	25,358		25,358
0605873M	152	MARINE CORPS PROGRAM WIDE SUPPORT	24,687	24,687	24,687		24,687
0305885N	153	TACTICAL CRYPTOLOGIC ACTIVITIES	1,998	1,998	1,998		1,998
0804758N	154	SERVICE SUPPORT TO JFCOM, JNTC	5,148	5,148	5,148		5,148
0909999N	155	FINANCING FOR CANCELLED ACCOUNT ADJUSTMENTS					
		<b>SUBTOTAL, RDT&amp;E MANAGEMENT SUPPORT, NAVY</b>	<b>954,672</b>	<b>961,172</b>	<b>944,672</b>	<b>4,500</b>	<b>959,172</b>
0603660N	156	OPERATIONAL SYSTEMS DEVELOPMENT ADVANCED DEVELOPMENT PROJECTS	[ ]	[ ]	[ ]		[ ]
0604227N	157	HARPOON MODIFICATIONS	68,214	68,214	68,214		68,214
0604402N	158	UNMANNED COMBAT AIR VEHICLE (UCAV) ADVANCED COMPONENT AND PROTOTYPE DEVELOPMENT	275,823	275,823	275,823		275,823
0101221N	159	STRATEGIC SUB & WEAPONS SYSTEM SUPPORT Reliable replacement warhead (RRW) Arming, fuzing, and firing systems Advanced LINAC facility	80,120	74,520 [-23,300] [13,300]	60,774 [-23,346]	-6,000 [-23,300] [13,300]	74,120
0101224N	160	SSBN SECURITY TECHNOLOGY PROGRAM	34,131	34,131	34,131	[4,000]	34,131
0101226N	161	SUBMARINE ACOUSTIC WARFARE DEVELOPMENT	7,384	7,384	7,384		7,384
0101402N	162	NAVY STRATEGIC COMMUNICATIONS	47,495	47,495	47,495		47,495
0203761N	163	RAPID TECHNOLOGY TRANSITION (RTT)	34,469	34,469	34,469		34,469
0204136N	164	F/A-18 SQUADRONS	71,232	71,232	71,232		71,232

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0204152N	165 E-2 SQUADRONS	54,096	54,096	54,096		54,096
0204163N	166 FLEET TELECOMMUNICATIONS (TACTICAL) Warfighter enhanced decision making	26,696	26,696	29,696 [3,000]		26,696
0204229N	167 TOMAHAWK AND TOMAHAWK MISSION PLANNING CENTER (TMPC)	14,212	17,212	14,212	1,000	15,212
0204311N	168 Low-cost image-based navigation and precision targeting INTEGRATED SURVEILLANCE SYSTEM	20,565	[3,000] 20,565	20,565	[1,000]	20,565
0204413N	169 AMPHIBIOUS TACTICAL SUPPORT UNITS	2,325	2,325	2,325		2,325
0204571N	170 CONSOLIDATED TRAINING SYSTEMS DEVELOPMENT	28,017	28,017	28,017		28,017
0204574N	171 CRYPTOLOGIC DIRECT SUPPORT	1,441	1,441	1,441		1,441
0204575N	172 ELECTRONIC WARFARE (EW) READINESS SUPPORT	24,276	24,276	24,276		24,276
0205601N	173 HARM IMPROVEMENT Advanced anti-radiation guided missile derivative	31,427	34,427 [3,000]	31,427		31,427
0205604N	174 TACTICAL DATA LINKS	4,247	4,247	4,247		4,247
0205620N	175 SURFACE ASW COMBAT SYSTEM INTEGRATION	21,720	21,720	21,720		21,720
0205632N	176 MK-48 ADCAP MK-48 post launch comm system	15,879	16,879	15,879		16,879
0205633N	177 AVIATION IMPROVEMENTS Radio frequency synthetic subsystems for military automated test systems	122,906	126,106 [3,000]	126,906 [3,000]	4,200	127,106
	Rapid repair structural adhesives				[1,000]	
	Ultraviolet-cure structural repair adhesives		[2,000]		[2,000]	
	Helio laminate widescreen development		[1,200]		[1,200]	
0205658N	178 NAVY SCIENCE ASSISTANCE PROGRAM	3,625	3,625	3,625		3,625
0205675N	179 OPERATIONAL NUCLEAR POWER SYSTEMS	71,576	71,576	71,576		71,576
0206313M	180 MARINE CORPS COMMUNICATIONS SYSTEMS	273,696	273,696	273,696		273,696

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0206623M	181	MARINE CORPS GROUND COMBAT/SUPPORTING ARMS SYSTEMS	136,080	145,080	136,080	-16,400	119,680
		Program Delay				[-19,400]	
		Marine corps shotgun modernization program		[3,000]		[3,000]	
		Enhanced military vehicle maintenance		[4,000]			
		Dev and test program for EMI hardened test shelter		[2,000]			
0206624M	182	MARINE CORPS COMBAT SERVICES SUPPORT	9,646	9,646	9,646		9,646
0207161N	183	TACTICAL AIM MISSILES	6,679	6,679	6,679		6,679
0207163N	184	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	8,556	8,556	8,556		8,556
0208058N	185	JOINT HIGH SPEED VESSEL (JHSV)	11,960	11,960	11,960		11,960
0301303N	186	MARITIME INTELLIGENCE	[ ]	[ ]	[ ]		[ ]
0301323N	187	COLLECTION MANAGEMENT	[ ]	[ ]	[ ]		[ ]
0301327N	188	TECHNICAL RECONNAISSANCE AND SURVEILLANCE	[ ]	[ ]	[ ]		[ ]
0301372N	189	CYBER SECURITY INITIATIVE - GDIP	[ ]	[ ]	[ ]		[ ]
0303109N	190	SATELLITE COMMUNICATIONS (SPACE) Joint-integrated sys tech for advanced digital networking	652,463	658,463	652,463	1,000	653,463
				[6,000]		[1,000]	
0303140N	191	INFORMATION SYSTEMS SECURITY PROGRAM	27,037	27,037	27,037		27,037
0303158M	192	JOINT COMMAND AND CONTROL PROGRAM (JC2)	2,000	2,000	2,000		2,000
0303158N	193	JOINT COMMAND AND CONTROL PROGRAM (JC2)	4,148	4,148	4,148		4,148
0305149N	194	COBRA JUDY	101,114	101,114	101,114		101,114
0305160N	195	NAVY METEOROLOGICAL AND OCEAN SENSORS-SPACE (METOC)	8,208	8,208	8,208		8,208
0305192N	196	MILITARY INTELLIGENCE PROGRAM (MIP) ACTIVITIES	4,614	4,614	4,614		4,614
0305204N	197	TACTICAL UNMANNED AERIAL VEHICLES	45,717	45,717	45,717		45,717
0305205N	198	ENDURANCE UNMANNED AERIAL VEHICLES BAMS program	480,098	418,098	431,898	-62,000	418,098
				[-62,000]	[-48,200]		
0305206N	199	AIRBORNE RECONNAISSANCE SYSTEMS	55,719	55,719	55,719		55,719

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0305207N	200	MANNED RECONNAISSANCE SYSTEMS	13,982	13,982	13,982		13,982
0305208N	201	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	44,540	44,540	44,540		44,540
0307207N	202	AERIAL COMMON SENSOR (ACS)	74,604	74,604	74,604		74,604
0308601N	203	MODELING AND SIMULATION SUPPORT	8,007	8,007	8,007		8,007
0702207N	204	DEPOT MAINTENANCE (NON-IF)	21,130	21,130	21,130		15,130
		F-18 Service Life Assessment Program delay				-6,000	
						[-6,000]	
0702239N	205	AVIONICS COMPONENT IMPROVEMENT PROGRAM	1,877	1,877	1,877		1,877
0708011N	206	INDUSTRIAL PREPAREDNESS	56,681	56,681	58,381		56,681
		Digital direct manufacturing technologies			[1,700]		
					15,000		
0708730N	207	MARITIME TECHNOLOGY (MARITECH)			[15,000]		
		National Shipbuilding Research Program					
		<b>SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT, NAVY</b>	<b>3,110,432</b>	<b>3,068,032</b>	<b>3,066,586</b>	<b>-83,200</b>	<b>3,027,232</b>
999		CLASSIFIED PROGRAMS	1,309,385	1,309,385	1,309,385		1,309,385
		<b>Total, RDT&amp;E Navy</b>	<b>19,337,238</b>	<b>19,764,738</b>	<b>19,442,192</b>	<b>8,365</b>	<b>19,345,603</b>

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		<b>RESEARCH, DEVELOPMENT, TEST &amp; EVALUATION, AIR FORCE</b>					
		<b>BASIC RESEARCH</b>					
0601102F	1	DEFENSE RESEARCH SCIENCES	309,926	309,926	309,926		309,926
0601103F	2	UNIVERSITY RESEARCH INITIATIVES	125,949	127,949	134,049	10,100	136,049
		Advanced design technologies for hypersonics research			[2,000]	[2,000]	
		Diamond substrates for microelectronics research			[2,500]	[2,500]	
		Information security research			[2,000]	[2,000]	
		Military decision cycle time research			[1,600]	[1,600]	
		Aerodynamic wind tunnel upgrade initiative		[2,000]	[2,000]		
0601108F	3	HIGH ENERGY LASER RESEARCH INITIATIVES	13,425	13,425	13,425		13,425
0301555F	4	CLASSIFIED PROGRAM	[ ]	[ ]	[ ]	[4,000]	[ ]
		Remote suspect identification		[4,000]	[ ]	[4,000]	[ ]
0301556F	5	SPECIAL PROGRAM	[ ]	[ ]	[ ]	[ ]	[ ]
0305172F	6	COMBINED ADVANCED APPLICATIONS	[ ]	[ ]	[ ]	[ ]	[ ]
		<b>SUBTOTAL, BASIC RESEARCH, AIR FORCE</b>	<b>449,300</b>	<b>451,300</b>	<b>457,400</b>	<b>10,100</b>	<b>459,400</b>
		<b>APPLIED RESEARCH</b>					
0602015F	7	MEDICAL DEVELOPMENT		5,100			
		Mobile diabetes management		[2,000]			
		Basic science research		[3,100]			

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0602102F	8	MATERIALS Fire and blast resistant materials research Health monitoring sensors for aerospace components Thermal protection systems for hypersonics Advanced carbon fiber research and test initiative Advanced casting and coating technologies FEL capabilities for aerospace microfabrication Next generation manufacturing processes Ceramic matrix composite turbine blade demonstration ONAMI safer nanomaterials and nanomanufacturing	117,143	132,543	125,643	17,900 (2,000) [1,500] [2,500] [3,000] [3,500] [1,400] [1,500] [4,000] [1,000]	135,043
0602201F	9	AEROSPACE VEHICLE TECHNOLOGIES Optical connector research	122,870	124,370	124,370	[1,500]	122,870
0602202F	10	Single-mode optical connectors for advanced air vehicles HUMAN EFFECTIVENESS APPLIED RESEARCH Joint theater air-ground simulation system Satellite control system training technology Bay area language tech innovation center (BAL TIC)	82,081	86,591	86,591	4,500 [2,500] [2,000]	86,591
0602203F	11	AEROSPACE PROPULSION Hybrid bearing development X-51B scramjet research Advanced vehicle propulsion center National test facility for aerospace fuels and propulsion Wavelength agile spectral harmonic oxygen sensor Cell-level battery controller High temperature, high energy-density capacitors Integrated electrical starter/generator Hydrocarbon boost technology demonstrator	218,049	235,449	225,049	9,950 [2,000] [5,000] [3,000] [1,700] [2,400] [2,800] [1,000] [3,500] [3,000]	227,999

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0602204F	12	AEROSPACE SENSORS	109,048	114,048	113,548	6,000	115,048
		Wideband electronic sensing technologies			[3,000]	[3,000]	
		Information quality tools -- persistent surveillance data sets		[2,000]	[1,500]	[2,000]	
		Net-centric sensor grids		[3,000]		[1,000]	
0602601F	13	SPACE TECHNOLOGY	117,519	120,519	130,519	4,500	122,019
		Seismic research program			[13,000]	[2,500]	
		Radiation hardened non-volatile memory technology		[3,000]		[2,000]	
0602602F	14	CONVENTIONAL MUNITIONS	55,963	55,963	55,963		55,963
0602605F	15	DIRECTED ENERGY TECHNOLOGY	62,871	62,871	62,871		62,871
0602702F	16	COMMAND CONTROL AND COMMUNICATIONS	109,492	110,492	111,992	2,000	111,492
		Cyber attack mitigation technologies			[2,500]	[2,000]	
		Cyber boot camp		[1,000]			
0602890F	17	HIGH ENERGY LASER RESEARCH	49,449	49,449	49,449		49,449
		<b>SUBTOTAL, APPLIED RESEARCH, AIR FORCE</b>	<b>1,044,495</b>	<b>1,097,395</b>	<b>1,085,995</b>	<b>44,850</b>	<b>1,089,345</b>
0603112F	18	ADVANCED TECHNOLOGY DEVELOPMENT	41,926	57,926	46,926	5,000	46,926
		ADVANCED MATERIALS FOR WEAPON SYSTEMS		[14,000]	[5,000]	[5,000]	
		Metals affordability initiative					
		Improved inspection reliability for optimized inspection		[2,000]			
0603203F	19	ADVANCED AEROSPACE SENSORS	56,916	62,916	58,916	4,000	60,916
		Reconfigurable secure computing technologies			[2,000]	[1,500]	
		Moving target strike		[6,000]		[2,500]	
0603211F	20	AEROSPACE TECHNOLOGY DEV/DEMO	44,918	44,918	44,918		44,918

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0603216F	21	AEROSPACE PROPULSION AND POWER TECHNOLOGY Assured aerospace fuels research	170,856	176,356	179,856	6,500	177,356
		HISTED supersonic/hypersonic cruise missile engine		[5,500]	[6,000]	[4,500]	
0603231F	22	VAAATE for supersonic cruise missiles					
0603270F	23	CREW SYSTEMS AND PERSONNEL PROTECTION TECHNOLOGY	26,630	26,630	26,630		26,630
0603311F	24	ELECTRONIC COMBAT TECHNOLOGY	21,056	24,056	21,056	1,500	22,556
0603401F	25	COTS analysis tools for navigational warfare BALLISTIC MISSILE TECHNOLOGY ADVANCED SPACECRAFT TECHNOLOGY	80,958	89,958	82,958	5,000	85,958
		Thin film amorphous solar arrays		[2,000]	[2,000]	[1,000]	
		Hybrid sounding rocket propulsion		[2,000]			
		Technology testing platform		[5,000]			
0603444F	26	Small low cost reconnaissance spacecraft components MAUI SPACE SURVEILLANCE SYSTEM (MSSS)	4,838	12,838	4,838	[2,000]	4,838
0603601F	27	High accuracy network determination system (HANDS) CONVENTIONAL WEAPONS TECHNOLOGY	11,813	11,813	14,813	3,000	14,813
		Integrated targeting devices			[3,000]	[3,000]	
0603605F	28	ADVANCED WEAPONS TECHNOLOGY	44,507	44,507	44,507		44,507
0603680F	29	MANUFACTURING TECHNOLOGY PROGRAM Prepreg thickness variability reduction program Wire integrity technology program	39,729	43,729	39,729	2,000	41,729
		C3I ADVANCED DEVELOPMENT		[2,000]			
0603789F	30	Optical interconnects research	30,103	30,103	32,103	2,000	32,103

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0603801F	31 SPECIAL PROGRAMS					
0603924F	32 HIGH ENERGY LASER ADVANCED TECHNOLOGY PROGRAM HEL directed energy weapons	4,013	4,013	9,013 [5,000]		4,013
	<b>SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT, AIR FORCE</b>	<b>578,263</b>	<b>629,763</b>	<b>606,263</b>	<b>29,000</b>	<b>607,263</b>
	<b>ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES</b>					
0603260F	33 INTELLIGENCE ADVANCED DEVELOPMENT	4,988	4,988	4,988		4,988
0603287F	34 PHYSICAL SECURITY EQUIPMENT	477	477	477		477
0603421F	35 NAVSTAR GLOBAL POSITIONING SYSTEM III					
0603423F	36 GLOBAL POSITIONING SYSTEM III - OPERATIONAL CONTROL SEGMENT GPS III-OCX	2,975	2,975	307,335 [304,360]		2,975
0603427F	37 GPS OPERATIONAL CONTROL SEGMENT - BACKWARDS COMPATIBILITY GPS III-OCX backwards compatibility	304,360	304,360	0		304,360
0603430F	38 ADVANCED EHF MILSATCOM (SPACE)	388,041	388,041	[-304,360]		388,041
0603432F	39 POLAR MILSATCOM (SPACE)	237,749	237,749	237,749		237,749
0603438F	40 SPACE CONTROL TECHNOLOGY Space situational awareness	76,845	76,845	81,845 [5,000]		76,845
0603742F	41 COMBAT IDENTIFICATION TECHNOLOGY	29,400	29,400	29,400		29,400
0603790F	42 NATO RESEARCH AND DEVELOPMENT	4,334	4,334	4,334		4,334
0603791F	43 INTERNATIONAL SPACE COOPERATIVE R&D	627	627	627		627

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0603845F	44	TRANSFORMATIONAL SATCOM (TSAT) Program reduction	842,974	842,974	1,192,974	-56,000	786,974
		TSAT		[350,000]		[-56,000]	
0603850F	45	INTEGRATED BROADCAST SERVICE	21,105	21,105			21,105
0603851F	46	INTERCONTINENTAL BALLISTIC MISSILE ICBM cryptography upgrade	65,629	70,629 [5,000]	65,629		65,629
0603854F	47	WIDEBAND GLOBAL SATCOM RDT&E (SPACE)	12,422	12,422	12,422		12,422
0603858F	48	SPACE RADAR					
0603859F	49	POLLUTION PREVENTION	2,877	2,877	2,877		2,877
0603860F	50	JOINT PRECISION APPROACH AND LANDING SYSTEMS	7,479	7,479	7,479		7,479
0604015F	51	NEXT GENERATION BOMBER					
0604796F	52	ALTERNATIVE FUELS Advanced propulsion non-tactical vehicle	28,464	30,664 [2,200]	28,464		28,464
0604830F	53	AUTOMATED AIR-TO-AIR REFUELING	9,889	9,889	9,889		9,889
0604856F	54	COMMON AERO VEHICLE (CAV)					
0604857F	55	OPERATIONALLY RESPONSIVE SPACE ORS Day/night ISR payload for ORS	110,032	120,032 [10,000]	120,032		110,032
0305178F	56	NATIONAL POLAR-ORBITING OPERATIONAL ENVIRONMENTAL SATELLITE SYSTEM (NPOESS)	289,469	289,469	289,469		289,469
		<b>SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES, AIR FORCE</b>	<b>2,440,136</b>	<b>2,457,336</b>	<b>2,805,136</b>	<b>-56,000</b>	<b>2,384,136</b>

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		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>					
0603840F	57	GLOBAL BROADCAST SERVICE (GBS)	18,790	18,790	18,790		18,790
0604222F	58	NUCLEAR WEAPONS SUPPORT	20,166	20,166	20,166		20,166
0604226F	59	B-1B	128,871	128,871	128,871		128,871
0604233F	60	SPECIALIZED UNDERGRADUATE FLIGHT TRAINING	7,462	7,462	7,462		7,462
0604240F	61	B-2 ADVANCED TECHNOLOGY BOMBER B-2 Radar (Transfer to APAF 24)	351,417	343,217	332,917	-8,200	343,217
		SDB moving target kill integration		[10,300]	[-18,500]		
0604261F	62	PERSONNEL RECOVERY SYSTEMS	54,995	54,995	54,995		54,995
0604270F	63	ELECTRONIC WARFARE DEVELOPMENT	52	52	52		52
0604287F	64	PHYSICAL SECURITY EQUIPMENT	125,067	125,067	125,067		125,067
0604329F	65	SMALL DIAMETER BOMB (SDB)	74,918	84,918	74,918	2,000	76,918
0604421F	66	COUNTERSPACE SYSTEMS Space control test capabilities		[10,000]		[2,000]	
0604425F	67	SPACE SITUATION AWARENESS SYSTEMS SBSS 10	210,501	210,501	220,501		210,501
0604429F	68	AIRBORNE ELECTRONIC ATTACK	34,279	34,279	34,279		34,279
0604441F	69	SPACE BASED INFRARED SYSTEM (SBIRS) HIGH EMD SBIRS ground operations and training	529,771	529,771	559,771	30,000	559,771
0604443F	70	THIRD GENERATION INFRARED SURVEILLANCE (3GIRS) Third generation infrared surveillance	149,064	74,964	[30,000]	[30,000]	74,964
0604602F	71	ARMAMENT/ORDNANCE DEVELOPMENT	2,095	2,095	2,095		2,095
0604604F	72	SUBMUNITIONS	1,730	1,730	1,730		1,730
0604617F	73	AGILE COMBAT SUPPORT	5,790	5,790	5,790		5,790
0604618F	74	JOINT DIRECT ATTACK MUNITION					
0604706F	75	LIFE SUPPORT SYSTEMS ACES 5 ejection seat	10,998	16,998	10,998	6,000	16,998
0604735F	76	COMBAT TRAINING RANGES	28,047	[6,000]	28,047	[6,000]	28,047

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0604740F	77	INTEGRATED COMMAND & CONTROL APPLICATIONS (IC2A)	177	7,177	177	2,000	2,177
0604750F	78	Distributed mission interoperability toolkit		[7,000]		[2,000]	
0604762F	79	INTELLIGENCE EQUIPMENT	1,488	1,488	1,488		1,488
0604800F	80	COMMON LOW OBSERVABLES VERIFICATION SYSTEM (CLOVERS) JOINT STRIKE FIGHTER (JSF)	1,524,016	1,786,516	1,774,016	247,500	1,771,516
		Alternative engine development			[215,000]	[247,500]	
		Fund competitive propulsion system			[35,000]		
		Technology development for F135 engine		[247,500]			
		Joint Strike Fighter competitive engine		[15,000]			
0604853F	81	F-135 technology insertion	33,719	33,719	33,719		33,719
		EVOLVED EXPENDABLE LAUNCH VEHICLE PROGRAM (SPACE)					57,000
0605011F	82	RDT&E FOR AGING AIRCRAFT	13,828	13,828	13,828		13,828
0605221F	83	NEXT GENERATION AERIAL REFUELING AIRCRAFT	831,759	831,759	893,419	-831,759	0
		Transfer to tanker replacement transfer fund				[-831,759]	
		USAF-requested transfer from APAF 10			[61,660]		
0605277F	84	CSAR-X RDT&E	305,062	265,062	265,062	-40,000	265,062
		Reflect delays in acquisition program			[-40,000]		
		Program delay					
0605278F	85	HC/MC-130 RECAP	11,692	11,692	11,692		11,692
0207434F	86	LINK-16 SUPPORT AND SUSTAINMENT	186,213	190,213	186,213	1,500	187,713
		Flexible access secure transfer		[4,000]		[1,500]	
0207450F	87	E-10 SQUADRONS	42,215	42,215	42,215		42,215
0207451F	88	SINGLE INTEGRATED AIR PICTURE (SIAP)	66,909	66,909	66,909		66,909
0207701F	89	FULL COMBAT MISSION TRAINING	135,152	135,152	135,152		135,152
0401138F	90	JOINT CARGO AIRCRAFT (JCA) Unexecutable request	26,777	26,777	26,777	-10,000	16,777
						[-10,000]	

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0401318F	91	CV-22	18,562	18,562	18,562		18,562
0401845F	92	AIRBORNE SENIOR LEADER C3 (SLC3S)	1,992	1,992	1,992		1,992
<b>SUBTOTAL, SYSTEM DEVELOPMENT &amp; DEMONSTRATION, AIR FORCE</b>			<b>4,953,574</b>	<b>5,120,774</b>	<b>5,216,734</b>	<b>-675,059</b>	<b>4,278,515</b>
<b>RDT&amp;E MANAGEMENT SUPPORT</b>							
0604256F	93	THREAT SIMULATOR DEVELOPMENT	34,568	34,568	34,568		34,568
0604759F	94	MAJOR T&E INVESTMENT	61,818	72,018	65,818	8,500	70,318
		High speed test track		[6,000]	[4,000]	[4,000]	
		FPS-16 radar modernization upgrade		[4,200]	[1,000]	[3,500]	
0605101F	95	EGlin AFB range operations control center upgrade	28,676	31,676	28,676	3,000	31,676
		RAND PROJECT AIR FORCE		[3,000]		[3,000]	
		Program increase					53
0605502F	96	SMALL BUSINESS INNOVATION RESEARCH	29,537	29,537	29,537		29,537
0605712F	97	INITIAL OPERATIONAL TEST & EVALUATION	787,737	787,737	787,737		787,737
0605807F	98	TEST AND EVALUATION SUPPORT	14,895	14,895	14,895		14,895
0605860F	99	ROCKET SYSTEMS LAUNCH PROGRAM (SPACE)	48,072	48,072	48,072		48,072
0605864F	100	SPACE TEST PROGRAM (STP)	46,234	46,234	46,234		46,234
0605976F	101	FACILITIES RESTORATION AND MODERNIZATION - TEST AND EVALUATION SUPPORT	46,234	46,234	46,234		46,234

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<u>Program Element</u>	<u>Line</u>	<u>Program Title</u>	<u>FY2009 Request</u>	<u>House Authorized</u>	<u>Senate Authorized</u>	<u>Agreement Change</u>	<u>Agreement Authorized</u>
0605978F	102	FACILITIES SUSTAINMENT - TEST AND EVALUATION SUPPORT	28,898	29,898	28,898	1,000	29,898
		Low profile arresting gear		[1,000]		[1,000]	
0804731F	103	GENERAL SKILL TRAINING					
1001004F	104	INTERNATIONAL ACTIVITIES	3,910	3,910	3,910		3,910
		<b>SUBTOTAL, RDT&amp;E MANAGEMENT SUPPORT, AIR FORCE</b>	<b>1,084,345</b>	<b>1,098,545</b>	<b>1,088,345</b>	<b>12,500</b>	<b>1,096,845</b>
<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>							
0604263F	105	COMMON VERTICAL LIFT SUPPORT PLATFORM	3,868	0	3,868		3,868
		Unjustified program		[-3,868]			
0605024F	106	ANTI-TAMPER TECHNOLOGY EXECUTIVE AGENCY	20,987	20,987	20,987		20,987
0605798F	107	ANALYSIS SUPPORT GROUP	[ ]	[ ]	[ ]		[ ]
0101133F	108	B-52 SQUADRONS	38,651	38,651	48,151		38,651
		B-52 CONECT			[9,500]		
0101120F	109	ADVANCED CRUISE MISSILE			396		396
0101122F	110	AIR-LAUNCHED CRUISE MISSILE (ALCM)	396	396	396		396
0101313F	111	STRAT WAR PLANNING SYSTEM - USSTRATCOM	17,553	17,553	17,553		17,553
0101314F	112	NIGHT FIST - USSTRATCOM	5,299	5,299	5,299		5,299
0101815F	113	ADVANCED STRATEGIC PROGRAMS	[ ]	[ ]	[ ]		[ ]
		ISSO			[-10,000]		
0102326F	114	REGIONSECTOR OPERATION CONTROL CENTER	23,858	23,858	23,858		23,858
		MODERNIZATION PROGRAM					
0102823F	115	STRATEGIC AEROSPACE INTELLIGENCE SYSTEM ACTIVITIES	15	15	15		15
0203761F	116	WARFIGHTER RAPID ACQUISITION PROCESS (WRAP)	20,807	20,807	20,807		20,807
		RAPID TRANSITION FUND					
0205219F	117	MQ-9 UAV	43,557	43,557	43,557		43,557

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0207131F	118	A-10 SQUADRONS	123,979	123,979	123,979		123,979
0207133F	119	F-16 SQUADRONS	184,213	184,213	184,213		184,213
0207134F	120	F-15E SQUADRONS	5,585	5,585	5,585		5,585
0207136F	121	MANNED DESTRUCTIVE SUPPRESSION	700,305	700,305	700,305		700,305
0207138F	122	F-22A SQUADRONS					
0207141F	123	F-117A SQUADRONS					
0207161F	124	TACTICAL AIM MISSILES	5,748	5,748	5,748		5,748
0207163F	125	ADVANCED MEDIUM RANGE AIR-TO-AIR MISSILE (AMRAAM)	54,239	54,239	54,239		54,239
0207170F	126	JOINT HELMET MOUNTED CUEING SYSTEM (JHMCS)	3,192	3,192	3,192		3,192
0207247F	127	AF TENCAP	11,578	11,578	11,578		11,578
0207248F	128	SPECIAL EVALUATION PROGRAM					
0207253F	129	COMPASS CALL	4,670	4,670	4,670		4,670
0207268F	130	AIRCRAFT ENGINE COMPONENT IMPROVEMENT PROGRAM	150,956	150,956	150,956		150,956
0207277F	131	CSAF INNOVATION PROGRAM Enhanced guardian angel kit		4,000 [4,000]			
0207325F	132	JOINT AIR-TO-SURFACE STANDOFF MISSILE (JASSM)	13,035	13,035	13,035		13,035
0207410F	133	AIR & SPACE OPERATIONS CENTER (AOC) Delay AOC, increment 10.2	118,834	118,834	78,434 [-40,400]		118,834
0207412F	134	MODULAR CONTROL SYSTEM	60,590	60,590	60,590		60,590
0207417F	135	AIRBORNE WARNING AND CONTROL SYSTEM (AWACS)	126,300	126,300	126,300		126,300
0207418F	136	TACTICAL AIRBORNE CONTROL SYSTEMS	1,530	1,530	1,530		1,530
0207423F	137	ADVANCED COMMUNICATIONS SYSTEMS	29,782	29,782	29,782		29,782
0207424F	138	EVALUATION AND ANALYSIS PROGRAM	794,036	794,036	794,036		794,036
0207433F	139	ADVANCED PROGRAM TECHNOLOGY					
0207438F	140	THEATER BATTLE MANAGEMENT (TBM) C4I	19,437	19,437	19,437		19,437

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0207445F	141	FIGHTER TACTICAL DATA LINK	62,788	62,788	62,788		62,788
0207446F	142	BOMBER TACTICAL DATA LINK	11,702	11,702	11,702		11,702
0207448F	143	C2ISR TACTICAL DATA LINK	1,727	1,727	1,727		1,727
0207449F	144	COMMAND AND CONTROL (C2) CONSTELLATION	32,151	32,151	32,151		32,151
0207581F	145	JOINT SURVEILLANCE/TARGET ATTACK RADAR SYSTEM (JSTARS)	97,641	97,641	195,641	-16,000	81,641
		Funded in FY08 supplemental					
		Improve maturity of MP-RTIP sensor suite for larger aircraft			[98,000]	[-36,000]	
0207590F	146	SEEK EAGLE	21,645	21,645	21,645		21,645
0207591F	147	ADVANCED PROGRAM EVALUATION	28,981	28,981	28,981		28,981
0207601F	148	USAF MODELING AND SIMULATION	3,870	3,870	3,870		3,870
0207605F	149	WARGAMING AND SIMULATION CENTERS	7,137	7,137	7,137		7,137
0207697F	150	DISTRIBUTED TRAINING AND EXERCISES	97,560	97,560	97,560		97,560
0208006F	151	MISSION PLANNING SYSTEMS	12,220	12,220	12,220		12,220
0208021F	152	INFORMATION WARFARE SUPPORT	1,077,970	1,077,970	1,077,970		1,077,970
0208161F	153	SPECIAL EVALUATION SYSTEM	[ ]	[ ]	[ ]		[ ]
0301310F	154	NATIONAL AIR INTELLIGENCE CENTER	[ ]	[ ]	[ ]		[ ]
0301314F	155	COBRA BALL	[ ]	[ ]	[ ]		[ ]
		Open source research centers		[3,000]			
0301315F	156	MISSILE AND SPACE TECHNICAL COLLECTION	[ ]	[ ]	[ ]		[ ]
0301324F	157	FOREST GREEN	[ ]	[ ]	[ ]		[ ]
0301386F	158	GDP COLLECTION MANAGEMENT	[ ]	[ ]	[ ]		[ ]
0302015F	159	E-4B NATIONAL AIRBORNE OPERATIONS CENTER (NAOC)	4,069	4,069	4,069		4,069
0303112F	160	AIR FORCE COMMUNICATIONS (AIRCOM)					
0303131F	161	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	70,995	70,995	70,995		70,995

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0303140F	162	INFORMATION SYSTEMS SECURITY PROGRAM Cybercraft	187,933	192,933	187,933		187,933
		Dark screen		[3,000]			
				[2,000]			
0303141F	163	GLOBAL COMBAT SUPPORT SYSTEM	4,320	4,320	4,320		4,320
0303150F	164	GLOBAL COMMAND AND CONTROL SYSTEM	3,218	2,218	3,218		3,218
		Global Command and Control System Air Force		[-1,000]			
0303158F	165	JOINT COMMAND AND CONTROL PROGRAM (JC2)	3,234	3,234	3,234		3,234
0303601F	166	MILSATCOM TERMINALS	337,098	337,098	337,098		337,098
0304111F	167	SPECIAL ACTIVITIES	[ ]	[ ]	[ ]		[ ]
0304260F	168	AIRBORNE SIGINT ENTERPRISE	173,631	173,631	173,631		173,631
0304311F	169	SELECTED ACTIVITIES	[ ]	[ ]	[ ]		[ ]
0304348F	170	ADVANCED GEOSPATIAL INTELLIGENCE (AGI)	[ ]	[ ]	[ ]		[ ]
0305099F	171	COMMUNICATION, NAVIGATION, SURVEILLANCE	6,275	6,275	6,275		6,275
0305103F	172	CYBER SECURITY INITIATIVE	2,083	2,083	2,083		2,083
0305110F	173	SATELLITE CONTROL NETWORK (SPACE)	16,758	16,758	16,758		16,758
0305111F	174	WEATHER SERVICE	47,347	47,347	53,347		47,347
		Integrate all terrain, weather & risk assessment information into one display			[6,000]		
0305114F	175	AIR TRAFFIC CONTROL, APPROACH, AND LANDING	6,867	6,867	6,867		6,867
0305116F	176	AERIAL TARGETS	34,777	34,777	34,777		34,777
0305124F	177	SPECIAL APPLICATIONS PROGRAM	[ ]	[ ]	[ ]		[ ]
0305127F	178	FOREIGN COUNTERINTELLIGENCE ACTIVITIES	[ ]	[ ]	[ ]		[ ]
0305128F	179	SECURITY AND INVESTIGATIVE ACTIVITIES	786	786	786		786
0305142F	180	APPLIED TECHNOLOGY AND INTEGRATION					
0305146F	181	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES	39	39	39		39

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0305159F	182	DEFENSE RECONNAISSANCE SUPPORT ACTIVITIES (SPACE)	[ ]	[ ]	[ ]	[-1,052,000]	[ ]
		FINDER					
		Phased Array			[25,000]		
		Program reduction			[27,000]		
		Program reduction			[-50,000]		
		Program reduction			[-406,000]		
0305160F	183	DEFENSE METEOROLOGICAL SATELLITE PROGRAM (SPACE)	127,513	127,513	127,513		127,513
0305164F	184	NAVSTAR GLOBAL POSITIONING SYSTEM (USER)	91,277	91,277	91,277		91,277
0305165F	185	NAVSTAR GLOBAL POSITIONING SYSTEM (SPACE AND CONTROL SEGMENTS)	[ ]	[ ]	[ ]		[ ]
0305172F	186	COMBINED ADVANCED APPLICATIONS	1,985	1,985	1,985		1,985
0305173F	187	SPACE AND MISSILE TEST AND EVALUATION CENTER	3,003	3,003	3,003		3,003
0305174F	188	SPACE WARFARE CENTER	12,376	12,376	12,376		12,376
0305182F	189	SPACELIFT RANGE SYSTEM (SPACE)	1,237	1,237	1,237		1,237
0305193F	190	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	149,752	159,752	139,752	-44,500	105,252
0305206F	191	AIRBORNE RECONNAISSANCE SYSTEMS				[5,500]	
		Multiple UAS cooperative concentrated observation and engagement against a common ground objective		[10,000]			
		Blacksniff testbed					
0305207F	192	MANNED RECONNAISSANCE SYSTEMS	12,819	16,319	12,819	[-50,000]	15,319
		RIVET JOINT ISR network integration		[3,500]		2,500	
0305208F	193	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	107,834	107,834	107,834	[2,500]	107,834
0305219F	194	MQ-1 PREDATOR UAV	24,773	24,773	34,773	6,000	30,773
		UAV sense and avoid			[10,000]	[6,000]	
0305220F	195	GLOBAL HAWK UAV	284,292	284,292	284,292		284,292
0305221F	196	NETWORK-CENTRIC COLLABORATIVE TARGETING	8,807	8,807	8,807		8,807
0305265F	197	GPS III SPACE SEGMENT	420,342	420,342	420,342		420,342



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0408011F	215	SPECIAL TACTICS / COMBAT CONTROL Joint precision AirDrop systems - mission planner RFI	5,728	12,228 [4,500]	5,728	2,000	7,728
0702207F	216	Tactical environmental clothing		[2,000]		[2,000]	
0702806F	217	DEPOT MAINTENANCE (NON-IF)	1,531	1,531	1,531		1,531
0708011F	218	ACQUISITION AND COMMAND SUPPORT INDUSTRIAL PREPAREDNESS	34,428	34,428 3,000	34,428		34,428
		Integrated structures for affordable transport aircraft		[3,000]			
0708012F	219	LOGISTICS SUPPORT ACTIVITIES		179,679	139,679	-10,000	179,679
0708610F	220	LOGISTICS INFORMATION TECHNOLOGY (LOGIT) Expeditionary combat support system unjustified growth	189,679	[10,000]	[50,000]	[10,000]	
0708611F	221	SUPPORT SYSTEMS DEVELOPMENT Clean cities national outreach prgm for power tech office Eielson Air Force Base alternative energy source program Expeditionary 200 kW + alternative power generator	8,145	17,045 [1,900]	8,145	4,000	12,145
0804757F	222	JOINT NATIONAL TRAINING CENTER	3,214	3,214	3,214	[3,000]	3,214
0808716F	223	OTHER PERSONNEL ACTIVITIES	116	116	116	[1,000]	116
0901202F	224	JOINT PERSONNEL RECOVERY AGENCY	5,768	5,768	5,768		5,768
0901212F	225	SERVICE-WIDE SUPPORT	3,016	3,016	3,016		3,016
0901218F	226	CIVILIAN COMPENSATION PROGRAM	8,123	8,123	8,123		8,123

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0901220F	227	PERSONNEL ADMINISTRATION	18,625	18,625	18,625		18,625
0901538F	228	FINANCIAL MANAGEMENT INFORMATION SYSTEMS DEVELOPMENT DEAMS	31,782	31,782	16,782	-15,000	16,782
					[-15,000]	[-15,000]	
		<b>SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT, AIR FORCE</b>	<b>7,211,815</b>	<b>7,171,547</b>	<b>7,171,915</b>	<b>-94,500</b>	<b>7,117,315</b>
	999	CLASSIFIED PROGRAMS	10,304,689	10,111,689	9,890,689	-1,048,000	9,256,689
	999X	Classified requirement		[-100,000]	0	0	
		<b>Total, RDT&amp;E Air Force</b>	<b>28,066,617</b>	<b>28,238,349</b>	<b>28,322,477</b>	<b>-1,777,109</b>	<b>26,289,508</b>

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<b>RESEARCH, DEVELOPMENT, TEST &amp; EVALUATION, DEFENSE-WIDE</b>							
<b>BASIC RESEARCH</b>							
0601000BR	1	DTRA BASIC RESEARCH INITIATIVE	18,000	18,000	18,000		18,000
0601101E	2	DEFENSE RESEARCH SCIENCES Combined injury consortium DARPA computer future	195,657	201,657 [5,000] [1,000]	195,657		195,657
0601111D8Z	3	GOVERNMENT/INDUSTRY COSPONSORSHIP OF UNIVERSITY RESEARCH		2,000			
0601114D8Z	4	Integrated cryo-cooled high power density systems DEFENSE EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH	2,833	[2,000] 12,833			12,833
0601120D8Z	5	Program increase NATIONAL DEFENSE EDUCATION PROGRAM		[10,000] 68,972	[8,000] 68,972	{10,000}	68,972
0601384BP	6	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM In-vitro models for biodefense vaccines Superstructural particle evaluation Chemical/biological defense basic research initiative	53,191	58,191 [5,000]	57,191 [1,000] [3,000]	2,500 [1,000] [1,500]	55,691
<b>SUBTOTAL, BASIC RESEARCH, DEFENSE-WIDE</b>			<b>338,653</b>	<b>361,653</b>	<b>350,653</b>	<b>12,500</b>	<b>351,153</b>

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		<b>APPLIED RESEARCH</b>					
0602000D8Z	7	JOINT MUNITIONS TECHNOLOGY	15,254	15,254	15,254		15,254
0602227D8Z	8	MEDICAL FREE ELECTRON LASER					
0602228D8Z	9	HISTORICALLY BLACK COLLEGES AND UNIVERSITIES (HBCU) SCIENCE	15,156	22,156	15,156	7,000	22,156
		John H. Hopps defense research scholars program		[2,000]		[2,000]	
		HBCU and minority serving institutions		[5,000]		[5,000]	
0602234D8Z	10	LINCOLN LABORATORY RESEARCH PROGRAM	31,340	31,340	34,140		31,340
		Next generation OTHR risk reduction			[2,800]		
0602303E	11	INFORMATION & COMMUNICATIONS TECHNOLOGY	254,009	254,009	254,009		254,009
0602304E	12	COGNITIVE COMPUTING SYSTEMS	145,262	145,262	145,262		145,262
0602383E	13	BIOLOGICAL WARFARE DEFENSE	66,291	51,291	66,291	-15,000	51,291
		DARPA poor execution		[-15,000]		[-15,000]	
0602384BP	14	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	203,731	218,731	222,231	7,000	210,731
		Agent fate response tool			[2,000]	[2,000]	
		Chem-Bio IR detector			[3,000]	[1,500]	
		Multivalent Marburg/Ebola vaccine			[4,500]	[3,500]	
		Rapid response chem-bio countermeasures			[4,000]		
		Therapeutics against botulism			[5,000]		
		Chemical/biological defense applied research initiative		[15,000]			
0602670D8Z	15	HUMAN, SOCIAL AND CULTURE BEHAVIOR MODELING (HSCB) APPLIED RESEARCH	7,685	9,685	7,685		7,685
		Center for automated language and cultural analysis		[2,000]			
0602702E	16	TACTICAL TECHNOLOGY	371,481	341,481	366,981	-30,000	341,481
		Laser guided bullet			[-4,500]		
		DARPA poor execution		[-30,000]		[-30,000]	

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0602715E	17	MATERIALS AND BIOLOGICAL TECHNOLOGY DARPA poor execution	285,264	275,264 [-10,000]	285,264	-10,000 [-10,000]	275,264
0602716BR	18	WMD DEFEAT TECHNOLOGY		196,457	213,957	-13,200	198,257
0602716E	19	ELECTRONICS TECHNOLOGY Three dimensional integrated circuit research DARPA poor execution	211,457	[-15,000]	[2,500]	[1,800] [-15,000]	
0602717BR	20	WMD DEFENSE TECHNOLOGIES		221,078	217,078	2,000	213,078
0602718BR	21	WEAPONS OF MASS DESTRUCTION DEFEAT TECHNOLOGIES Blast mitigation and protection National incident management system	211,078	[10,000]	[2,000]	[2,000]	
0303153K	22	JOINT SPECTRUM CENTER		31,454	25,104	2,000	25,104
1160401BB	23	SPECIAL OPERATIONS TECHNOLOGY DEVELOPMENT FOPEN radar technologies Craft tech demos to quantify and mitigate operator injury Expendable airdrop delivery system	23,104	[4,850] [3,500]	[2,000]	[2,000]	
1160407BB	24	SOF MEDICAL TECHNOLOGY DEVELOPMENT Portable TBI diagnosis systems	2,459	2,459	3,959 [1,500]		2,459
<b>SUBTOTAL, APPLIED RESEARCH, DEFENSE-WIDE</b>			<b>1,843,571</b>	<b>1,815,921</b>	<b>1,872,371</b>	<b>-50,200</b>	<b>1,793,371</b>
0603000D8Z	25	ADVANCED TECHNOLOGY DEVELOPMENT	15,970	15,970	15,970		15,970
0603121D8Z	26	INSENSITIVE MUNITIONS - ADVANCED DEVELOPMENT SO/LIC ADVANCED DEVELOPMENT	32,832	32,832	32,832		32,832





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0603712S	41	GENERIC LOGISTICS R&D TECHNOLOGY DEMONSTRATIONS	19,375	21,375	38,375	25,000	44,375
		Advanced energy storage technology initiative				[10,000]	
		Biofuels research program			[4,000]	[2,000]	
		Emerging critical interconnection technology program		[2,000]	[2,000]	[2,000]	
		Mobile microgrid research			[3,000]	[3,000]	
		Vehicle fuel cell & hydrogen logistics program			[10,000]	[8,000]	
0603713S	42	DEPLOYMENT AND DISTRIBUTION ENTERPRISE TECHNOLOGY	30,000	30,000	30,000		30,000
0603716D8Z	43	STRATEGIC ENVIRONMENTAL RESEARCH PROGRAM	69,038	69,038	69,038		69,038
0603720S	44	MICROELECTRONICS TECHNOLOGY DEVELOPMENT AND SUPPORT		16,000	3,000	7,500	7,500
		Superlattice nanotechnology research			[3,000]	[2,000]	
		3-D electronics and power		[3,000]		[3,000]	
		Feature size yield enhancement at DMEA ARMS foundry		[5,000]		[3,000]	
		End to end semi fab alpha tool		[5,000]		[2,500]	
0603727D8Z	45	JOINT WARFIGHTING PROGRAM	11,098	11,098	11,098		11,098
0603739E	46	ADVANCED ELECTRONICS TECHNOLOGIES	201,146	191,146	201,146	-10,000	191,146
		DARPA poor execution		[-10,000]		[-10,000]	
0603745D8Z	47	SYNTHETIC APERTURE RADAR (SAR) COHERENT CHANGE DETECTION (CDD)	7,984	7,984	7,984		7,984
0603750D8Z	48	ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS					
0603755D8Z	49	HIGH PERFORMANCE COMPUTING MODERNIZATION PROGRAM	208,079	208,079	208,079		208,079
0603760E	50	COMMAND, CONTROL AND COMMUNICATIONS SYSTEMS	338,964	328,964	338,964	-10,000	328,964
		DARPA poor execution		[-10,000]		[-10,000]	
0603764E	51	LAND WARFARE TECHNOLOGY					
0603765E	52	CLASSIFIED DARPA PROGRAMS	196,697	196,697	196,697		196,697

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0603766E	53	NETWORK-CENTRIC WARFARE TECHNOLOGY	156,733	156,733	156,733		156,733
0603767E	54	SENSOR TECHNOLOGY	226,470	226,470	226,470		226,470
0603768E	55	GUIDANCE TECHNOLOGY	110,572	110,572	110,572		110,572
0603769SE	56	DISTRIBUTED LEARNING ADVANCED TECHNOLOGY DEVELOPMENT	13,538	13,538	13,538		13,538
0603781D8Z	57	SOFTWARE ENGINEERING INSTITUTE	31,244	31,244	31,244		31,244
0603805S	58	DUAL USE TECHNOLOGY					
0603826D8Z	59	QUICK REACTION SPECIAL PROJECTS Special warfare domain awareness	113,924	115,924	115,924	2,000	115,924
		REDTIE		[2,000]	[2,000]	[2,000]	
0603828D8Z	60	JOINT EXPERIMENTATION WMD exercises	114,947	114,947	116,447		114,947
0603832D8Z	61	JOINT WARGAMING SIMULATION MANAGEMENT OFFICE Modeling and simulation standards development	38,147	38,947	38,147	800	38,947
0603941D8Z	62	TEST & EVALUATION SCIENCE & TECHNOLOGY	94,672	94,672	94,672		94,672
0603942D8Z	63	TECHNOLOGY TRANSFER	2,170	2,170	2,170		2,170
1160402BB	64	SPECIAL OPERATIONS ADVANCED TECHNOLOGY DEVELOPMENT Partnership for defense innovation Wi-Fi laboratory testing SOCOM rapid exploitation of innovative technologies	28,930	51,930	28,930		28,930
1160472BB	65	SOF INFORMATION AND BROADCAST SYSTEMS	10,990	10,990	10,990		10,990
		<b>SUBTOTAL, ADVANCED TECHNOLOGY DEVELOPMENT, DEFENSE-WIDE</b>	<b>3,536,023</b>	<b>3,562,023</b>	<b>3,550,523</b>	<b>-65,200</b>	<b>3,470,823</b>

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0603161D8Z	66	ADVANCED COMPONENT DEVELOPMENT & PROTOTYPES NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E ADC&P	38,758	38,758	38,758		38,758
0603228D8Z	67	PHYSICAL SECURITY EQUIPMENT					
0603527D8Z	68	RETRACT LARCH	22,945	22,945	22,945		22,945
0603709D8Z	69	JOINT ROBOTICS PROGRAM	11,847	11,847	11,847		11,847
0603714D8Z	70	ADVANCED SENSOR APPLICATIONS PROGRAM ASAP			20,000	20,000	20,000
0603851D8Z	71	ENVIRONMENTAL SECURITY TECHNICAL CERTIFICATION PROGRAM	31,600	31,600	[20,000]	[20,000]	31,600
0603881C	72	BALLISTIC MISSILE DEFENSE TERMINAL DEFENSE SEGMENT	1,019,073	964,073	1,012,073	-7,000	1,012,073
		THAAD long lead (Transfer to new MDA procurement line)			[-65,000]		
		Upper-tier follow-on to Arrow			[30,000]		
		Transfer to Procurement, Defense-wide Line 96			[-65,000]		
		Short range missile defense			[28,000]		
0603882C	73	BALLISTIC MISSILE DEFENSE MIDCOURSE DEFENSE SEGMENT	2,076,662	1,894,662	2,076,662	-96,500	1,980,162
		European site reduction				[-96,500]	
0603883C	74	BALLISTIC MISSILE DEFENSE BOOST DEFENSE SEGMENT Program decrease	421,229	378,629	375,429	-29,500	391,729
0603884BP	75	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM Real-time viral agent detectors	51,291	51,291	[-45,800]	[-29,500]	51,291
					55,291		
					[4,000]		

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0603894C	83	MULTIPLE KILL VEHICLE Excess funds Program decrease	354,455	254,455 [-100,000]	304,455 [-50,000]	-50,000 [-50,000]	304,455
0603895C	84	BALLISTIC MISSILE DEFENSE SYSTEM SPACE PROGRAMS	29,771	19,771	19,771	-10,000	19,771
0603896C	85	Space test bed BALLISTIC MISSILE DEFENSE COMMAND AND CONTROL, BATTLE MANAGEMENT AND COMMUNICATIONS	289,277	289,277	289,277	[-10,000]	289,277
0603897C	86	BALLISTIC MISSILE DEFENSE HERCULES	55,955	55,955	55,955		55,955
0603898C	87	BALLISTIC MISSILE DEFENSE JOINT WARFIGHTER SUPPORT	69,982	69,982	69,982		69,982
0603904C	88	MISSILE DEFENSE INTEGRATION & OPERATIONS CENTER (MDIOC)	96,404	96,404	96,404		96,404
0603905C	89	BALLISTIC MISSILE DEFENSE DISTRIBUTED MULTI ECHELON TRAINING SYSTEM (DMETS)	2,978	2,978	2,978		2,978
0603906C	90	REGARDING TRENCH					
0603907C	91	SEA BASED X-BAND RADAR (SBX) 91X Missile Defense Agency undistributed reduction					
0603920D8Z	92	HUMANITARIAN DEMINING	14,373	-22,000 14,373	-268,700 14,373		14,373
0603923D8Z	93	COALITION WARFARE	14,030	14,030	14,030		14,030
0604016D8Z	94	DEPARTMENT OF DEFENSE CORROSION PROGRAM Asset lifecycle program Corrosion control, prevention and prediction research Managing and extending DOD asset lifecycles	5,102	9,102	11,602 [3,500]	5,500 [3,000]	10,602 14,962
0604648D8Z	95	JOINT CAPABILITY TECHNOLOGY DEMONSTRATIONS	14,962	14,962	14,962	[2,500]	14,962

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0604670D8Z	96	HUMAN, SOCIAL AND CULTURE BEHAVIOR MODELING (HSCB) RESEARCH AND ENGINEERING COMPOEX	5,991	7,991	8,491		5,991
		Program increase		[2,000]	[2,500]		
0604787D8Z	97	JOINT SYSTEMS INTEGRATION COMMAND (JSIC)	19,643	19,643	19,643		19,643
0604828D8Z	98	JOINT FIRES INTEGRATION AND INTEROPERABILITY TEAM	16,906	16,906	16,906		16,906
0605017D8Z	99	REDUCTION OF TOTAL OWNERSHIP COST	24,765	24,765	24,765		24,765
0303191D8Z	100	JOINT ELECTROMAGNETIC TECHNOLOGY (JET) PROGRAM	3,524	3,524	3,524		3,524
0604400D8Z	100X	UAS AIRSPACE INTEGRATION UAV modeling and simulation			15,000		
				[15,000]			
		<b>SUBTOTAL, ADVANCED COMPONENT DEVELOPMENT &amp; PROTOTYPES, DEFENSE-WIDE</b>	<b>8,941,569</b>	<b>8,131,069</b>	<b>8,346,269</b>	<b>-428,300</b>	<b>8,513,269</b>
		<b>SYSTEM DEVELOPMENT &amp; DEMONSTRATION</b>					
0604051D8Z	101	DEFENSE ACQUISITION CHALLENGE PROGRAM (DACP)	30,363	30,363	30,363		30,363
0604161D8Z	102	NUCLEAR AND CONVENTIONAL PHYSICAL SECURITY EQUIPMENT RDT&E SDD	4,355	4,355	4,355		4,355
0604165D8Z	103	PROMPT GLOBAL STRIKE CAPABILITY DEVELOPMENT	117,572	124,572	147,572	3,000	120,572
		Biconic vehicle manufacture			[-15,000]		
		Hypersonic boost glide vehicle			[45,000]		
		Army advanced hypersonic weapon		[7,000]		[3,000]	
0604384BP	104	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	299,373	299,373	299,373		299,373
0604709D8Z	105	JOINT ROBOTICS PROGRAM	5,725	5,725	5,725		5,725

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0604764K	106	ADVANCED IT SERVICES JOINT PROGRAM OFFICE (AITS-JPO)	13,770	13,770	13,770		13,770
0604771D8Z	107	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)	20,600	20,600	20,600		20,600
0605000BR	108	WEAPONS OF MASS DESTRUCTION DEFEAT CAPABILITIES	15,946	15,946	15,946		15,946
0605013BL	109	INFORMATION TECHNOLOGY DEVELOPMENT	11,611	11,611	11,611		11,611
06050188TA	110	DEFENSE INTEGRATED MILITARY HUMAN RESOURCES	37,400	37,400	37,400		37,400
06050208TA	111	BUSINESS TRANSFORMATION AGENCY R&D ACTIVITIES	148,958	148,958	148,958		148,958
0605021SE	112	HOMELAND PERSONNEL SECURITY INITIATIVE	400	400	400		400
0605140D8Z	113	TRUSTED FOUNDRY	42,360	42,360	42,360		42,360
0605648D8Z	114	DEFENSE ACQUISITION EXECUTIVE (DAE) PILOT PROGRAM	5,883	5,883	5,883		5,883
0303129K	115	DEFENSE MESSAGE SYSTEM					
0303141K	116	GLOBAL COMBAT SUPPORT SYSTEM	18,604	18,604	18,604		18,604
0303158K	117	JOINT COMMAND AND CONTROL PROGRAM (JC2) NECC	147,339	147,339	57,339	-77,100	70,239
						[-77,100]	
		<b>SUBTOTAL, SYSTEM DEVELOPMENT &amp; DEMONSTRATION, DEFENSE-WIDE</b>	<b>920,259</b>	<b>927,259</b>	<b>860,259</b>	<b>-74,100</b>	<b>846,159</b>
0603757D8Z	118	<b>RDT&amp;E MANAGEMENT SUPPORT</b> TRAINING TRANSFORMATION (T2) Indiana complex operations partnership	38,729	40,729	38,729	2,000	40,729
0604774D8Z	119	DEFENSE READINESS REPORTING SYSTEM (DRRS)	11,385	11,385	11,385	[2,000]	11,385
0604875D8Z	120	JOINT SYSTEMS ARCHITECTURE DEVELOPMENT	14,310	14,310	14,310		14,310

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0604940D8Z	121	CENTRAL TEST AND EVALUATION INVESTMENT	133,852	151,852	142,352	11,000	144,852
		SAM hardware simulators		[6,000]	[5,000]	[5,000]	
		Range network enterprise technologies		[8,000]	[3,500]	[3,500]	
		Joint gulf range complex upgrade		[4,000]	[1,500]	[1,500]	
		Gulf range mobile instrumentation capability (GR-MIC)		9,658	9,658	[1,000]	9,658
0604943D8Z	122	THERMAL VICAR	9,658	9,658	9,658		9,658
0605100D8Z	123	JOINT MISSION ENVIRONMENT TEST CAPABILITY (JMETC)	8,834	8,834	8,834		8,834
0605104D8Z	124	TECHNICAL STUDIES, SUPPORT AND ANALYSIS	34,520	36,020	34,520	1,500	36,020
		Center for technology and national security policy		[1,500]		[1,500]	
0605110D8Z	125	USD(A&T)-CRITICAL TECHNOLOGY SUPPORT	4,007	4,007	4,007		4,007
0605117D8Z	126	FOREIGN MATERIAL ACQUISITION AND EXPLOITATION	62,816	67,816	62,816		62,816
		Foreign material acquisition training devices		[5,000]			
0605126J	127	JOINT THEATER AIR AND MISSILE DEFENSE ORGANIZATION	55,282	55,282	55,282		55,282
0605128D8Z	128	CLASSIFIED PROGRAM USD(P)					
0605130D8Z	129	FOREIGN COMPARATIVE TESTING	34,910	34,910	34,910		34,910
0605161D8Z	130	NUCLEAR MATTERS-PHYSICAL SECURITY	4,475	4,475	4,475		4,475
0605170D8Z	131	SUPPORT TO NETWORKS AND INFORMATION INTEGRATION	14,723	14,723	14,723		14,723
0605200D8Z	132	GENERAL SUPPORT TO USD (INTELLIGENCE)					
0605384BP	133	CHEMICAL AND BIOLOGICAL DEFENSE PROGRAM	4,379	4,379	4,379		4,379
0605502BR	134	SMALL BUSINESS INNOVATION RESEARCH	100,082	100,082	100,082		100,082
0605502C	135	SMALL BUSINESS INNOVATIVE RESEARCH - MDA					
0605502D8Z	136	SMALL BUSINESS INNOVATIVE RESEARCH					
0605502E	137	SMALL BUSINESS INNOVATIVE RESEARCH					
0605502S	138	SMALL BUSINESS INNOVATIVE RESEARCH					

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0605790D8Z	139	SMALL BUSINESS INNOVATION RESEARCH/CHALLENGE ADMINISTRATION	2,165	2,165	5,165		2,165
		Anti-lamper software systems			[3,000]		
0605798D8Z	140	DEFENSE TECHNOLOGY ANALYSIS	11,040	11,040	11,040		11,040
0605798S	141	DEFENSE TECHNOLOGY ANALYSIS					
0605799D8Z	142	FORCE TRANSFORMATION DIRECTORATE	20,701	32,101	5,701	1,100	21,801
		Program reduction			[-15,000]		
		Science and technology for strategic communications		[8,000]			
		Defense command integration center		[3,400]		[1,100]	
0605801KA	143	DEFENSE TECHNICAL INFORMATION CENTER (DTIC)	52,696	52,696	52,696		52,696
0605803SE	144	R&D IN SUPPORT OF DOD ENLISTMENT, TESTING AND EVALUATION	25,435	25,435	25,435		25,435
0605804D8Z	145	DEVELOPMENT TEST AND EVALUATION	20,396	24,396	20,396	4,000	24,396
		Renewable fuel systems for defense applications		[4,000]		[4,000]	
0605897E	146	DARPA AGENCY RELOCATION	28,000	28,000	28,000		28,000
0605898E	147	MANAGEMENT HQ - R&D	52,700	52,700	52,700		52,700
0606100D8Z	148	BUDGET AND PROGRAM ASSESSMENTS	5,878	5,878	5,878		5,878
0301555G	149	CLASSIFIED PROGRAM	[ ]	[ ]	[ ]		[ ]
0301556G	150	SPECIAL PROGRAM	[ ]	[ ]	[ ]		[ ]
0303166D8Z	151	SUPPORT TO INFORMATION OPERATIONS (IO) CAPABILITIES	30,039	30,039	30,039		30,039
0303169D8Z	152	INFORMATION TECHNOLOGY RAPID ACQUISITION	5,254	12,254	5,254		5,254
		Information technology clearinghouse		[7,000]			
0305103E	153	CYBER SECURITY INITIATIVE	50,000	50,000	25,000		50,000
		Program reduction			[-25,000]		
0305193D8Z	154	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	17,625	17,625	17,625		17,625

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0305193G	155	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	[ ]	[ ]	[ ]	[ ]	[ ]
0305400D8Z	156	WARFIGHTING AND INTELLIGENCE-RELATED SUPPORT	831	831	831	831	831
0901585C	157	PENTAGON RESERVATION	19,734	19,734	19,734	19,734	19,734
0901598C	158	MANAGEMENT HQ - MDA Management support	86,453	81,453	86,453	-5,000	81,453
0901598D8V	159	IT SOFTWARE DEV INITIATIVES	599	[-5,000]	599	[-5,000]	599
<b>SUBTOTAL, RDT&amp;E MANAGEMENT SUPPORT, DEFENSE-WIDE</b>			<b>961,508</b>	<b>1,005,408</b>	<b>933,008</b>	<b>14,600</b>	<b>976,108</b>
<b>OPERATIONAL SYSTEMS DEVELOPMENT</b>							
0604130V	160	DEFENSE INFORMATION SYSTEM FOR SECURITY (DISS)	11,533	11,533	11,533	11,533	11,533
0605127T	161	PARTNERSHIP FOR PEACE (PFP) INFORMATION	2,496	2,496	2,496	2,496	2,496
0607384BP	162	CHEMICAL AND BIOLOGICAL DEFENSE (OPERATIONAL SYSTEMS DEVELOPMENT)	10,274	10,274	10,274	10,274	10,274
0607828D8Z	163	JOINT INTEGRATION AND INTEROPERABILITY	49,371	49,371	49,371	49,371	49,371
0204571J	164	JOINT STAFF ANALYTICAL SUPPORT	8,030	8,030	8,030	8,030	8,030
0208043J	165	CLASSIFIED PROGRAMS	1,728	1,728	1,728	1,728	1,728
0208045K	166	C4I INTEROPERABILITY	76,226	76,226	76,226	76,226	76,226
0301011G	167	CRYPTOLOGIC ACTIVITIES IED industrial exploitation (IDEX) program	[ ]	[ ]	[ ]	[ ]	[ ]
0301144K	168	JOINT/ALLIED COALITION INFORMATION SHARING	19,073	19,073	19,073	19,073	19,073
0301301L	169	GENERAL DEFENSE INTELLIGENCE PROGRAM Portable device for latent fingerprint identification	[ ]	[ ]	[ ]	[ ]	[ ]
03011318BB	170	HUMINT (CONTROLLED)	[ ]	[ ]	[ ]	[ ]	[ ]
0301371G	171	CYBER SECURITY INITIATIVE - CCP	[ ]	[ ]	[ ]	[ ]	[ ]
0301372L	172	CYBER SECURITY INITIATIVE - GDIP	[ ]	[ ]	[ ]	[ ]	[ ]

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0301555BB	173	CLASSIFIED PROGRAMS	( )	( )	( )		( )
0301555BZ	174	CLASSIFIED PROGRAMS	( )	( )	( )		( )
0301556BB	175	SPECIAL PROGRAM	( )	( )	( )		( )
0301556BZ	176	SPECIAL PROGRAM	( )	( )	( )		( )
0302016K	177	NATIONAL MILITARY COMMAND SYSTEM-WIDE SUPPORT	615	615	615		615
0302019K	178	DEFENSE INFO INFRASTRUCTURE ENGINEERING AND INTEGRATION	16,054	16,054	16,054		16,054
0303126K	179	LONG-HAUL COMMUNICATIONS - DCS	8,508	8,508	8,508		8,508
0303131K	180	MINIMUM ESSENTIAL EMERGENCY COMMUNICATIONS NETWORK (MEECN)	9,685	9,685	9,685		9,685
0303135G	181	PUBLIC KEY INFRASTRUCTURE (PKI)	15,577	15,577	15,577		15,577
0303136G	182	KEY MANAGEMENT INFRASTRUCTURE (KMI)	49,578	49,578	49,578		49,578
0303140D8Z	183	INFORMATION SYSTEMS SECURITY PROGRAM	13,459	13,459	13,459		13,459
0303140G	184	INFORMATION SYSTEMS SECURITY PROGRAM Software assurance education	394,074	394,074	395,074	1,000	395,074
0303140K	185	INFORMATION SYSTEMS SECURITY PROGRAM			[1,000]	[1,000]	
0303148K	186	DISA MISSION SUPPORT OPERATIONS	2,181	2,181	2,181		2,181
0303148J	187	C4I FOR THE WARRIOR	3,662	3,662	3,662		3,662
0303149K	188	C4I FOR THE WARRIOR					
0303150K	189	GLOBAL COMMAND AND CONTROL SYSTEM SORTS	36,374	36,374	34,374		36,374
0303153K	190	JOINT SPECTRUM CENTER			[-2,000]		
0303170K	191	NET-CENTRIC ENTERPRISE SERVICES (NCES)	19,319	19,319	19,319		19,319
0303610K	192	TELEPORT PROGRAM	429	429	429		429
			2,060	2,060	2,060		2,060

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(Dollars in Thousands)

<u>Program Element</u>	<u>Line</u>	<u>Program Title</u>	<u>FY2009 Request</u>	<u>House Authorized</u>	<u>Senate Authorized</u>	<u>Agreement Change</u>	<u>Agreement Authorized</u>
0304210BB	193	SPECIAL APPLICATIONS FOR CONTINGENCIES Unmanned aerial systems test facility upgrade	16,225	27,225	16,225	5,000	21,225
		Expeditionary persistent power		[8,000]		[3,000]	
		NATIONAL GEOSPATIAL-INTELLIGENCE PROGRAM (NGP)		[3,000]		[2,000]	
0304345BQ	194	NATIONAL GEOSPATIAL-INTELLIGENCE PROGRAM (NGP)	[ ]	[ ]	[ ]		[ ]
0305102BQ	195	DEFENSE GEOSPATIAL-INTELLIGENCE PROGRAM	[ ]	[ ]	[ ]		[ ]
0305103D8Z	196	CYBER SECURITY INITIATIVE	1,000	1,000	1,000		1,000
0305103G	197	CYBER SECURITY INITIATIVE	[ ]	[ ]	[ ]		[ ]
0305103K	198	CYBER SECURITY INITIATIVE	12,800	12,800	12,800		12,800
0305125D8Z	199	CRITICAL INFRASTRUCTURE PROTECTION (CIP)	12,700	12,700	12,700		12,700
0305127BZ	200	FOREIGN COUNTERINTELLIGENCE ACTIVITIES	[ ]	[ ]	[ ]		[ ]
0305146BZ	201	DEFENSE JOINT COUNTERINTELLIGENCE ACTIVITIES	2,947	2,947	2,947		2,947
0305163L	202	DEFENSE HUMAN INTELLIGENCE (HUMINT) ACTIVITIES	[ ]	[ ]	[ ]		[ ]
0305166D8Z	203	POLICY R&D PROGRAMS	8,237	8,237	8,237		8,237
0305193G	204	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	[ ]	[ ]	[ ]		[ ]
0305193L	205	INTELLIGENCE SUPPORT TO INFORMATION OPERATIONS (IO)	[ ]	[ ]	[ ]		[ ]
0305199D8Z	206	NET CENTRICITY	12,716	12,716	12,716		12,716
0305202G	207	DRAGON U-2	[ ]	[ ]	[ ]		[ ]
0305206G	208	AIRBORNE RECONNAISSANCE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305207G	209	MANNED RECONNAISSANCE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305208BB	210	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	3,165	3,165	3,165		3,165
0305208BQ	211	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305208G	212	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305208K	213	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	3,227	3,227	3,227		3,227
0305208L	214	DISTRIBUTED COMMON GROUND/SURFACE SYSTEMS	[ ]	[ ]	[ ]		[ ]
0305219BB	215	MQ-1 PREDATOR A UAV	13,679	13,679	13,679		13,679
0305229G	216	REAL-TIME ARCHITECTURE DEVELOPMENT (RT10)	[ ]	[ ]	[ ]		[ ]

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(Dollars in Thousands)

Program Element	Line	Program Title	FY2009 Request	House Authorized	Senate Authorized	Agreement Change	Agreement Authorized
0305866L	217	DIA SUPPORT TO SOUTHCOM INTELLIGENCE ACTIVITIES	( )	( )	( )		( )
0305880L	218	COMBATANT COMMAND INTELLIGENCE OPERATIONS	( )	( )	( )		( )
0305883L	219	HARD AND DEEPLY BURIED TARGET (HDBT) INTEL SUPPORT	( )	( )	( )		( )
0305884L	220	INTELLIGENCE PLANNING AND REVIEW ACTIVITIES	( )	( )	( )		( )
0305885G	221	TACTICAL CRYPTOLOGIC ACTIVITIES Final e-Curfew	( )	( )	[25,000]		( )
0305889G	222	COUNTERDRUG INTELLIGENCE SUPPORT	( )	( )	( )		( )
0307141G	223	INFORMATION OPERATIONS TECHNOLOGY INTEGRATION	( )	( )	( )		( )
0307207G	224	AERIAL COMMON SENSOR	( )	( )	( )		( )
0708011S	225	INDUSTRIAL PREPAREDNESS Industrial base innovation fund	20,480	20,480	50,480	24,000	44,480
0708012S	226	LOGISTICS SUPPORT ACTIVITIES	2,846	2,846	[30,000]	[24,000]	2,846
0902298J	227	MANAGEMENT HEADQUARTERS (JCS)	3,401	3,401	2,846		3,401
1001018D8Z	228	NATO JOINT STARS	27,756	27,756	27,756		27,756
11304355B	229	STORM					
11602798B	230	SMALL BUSINESS INNOVATIVE RESEARCH/SMALL BUS TECH TRANSFER PILOT PROG					
11604038B	231	SPECIAL OPERATIONS AVIATION SYSTEMS ADVANCED DEVELOPMENT Gunship lite prototype test bed	43,977	73,977	43,977		43,977
11604048B	232	SPECIAL OPERATIONS TACTICAL SYSTEMS DEVELOPMENT Covert communications for special operations forces	13,263	17,263	13,263		13,263
11604058B	233	SPECIAL OPERATIONS INTELLIGENCE SYSTEMS DEVELOPMENT Advanced long endurance unattended ground sensors	39,125	43,325	39,125	4,200	43,325
11604088B	234	SOF OPERATIONAL ENHANCEMENTS Meteorological and oceanographic collection sensors	48,137	52,037	48,137	[4,200]	48,137
				[3,900]			

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**Title II - RDT&E**  
(Dollars in Thousands)

<u>Program Element</u>	<u>Line</u>	<u>Program Title</u>	<u>FY2009 Request</u>	<u>House Authorized</u>	<u>Senate Authorized</u>	<u>Agreement Change</u>	<u>Agreement Authorized</u>
1160489BB	248	SOF GLOBAL VIDEO SURVEILLANCE ACTIVITIES	14,686	14,686	14,686		14,686
1160490BB	249	SOF OPERATIONAL ENHANCEMENTS INTELLIGENCE	8,729	8,729	8,729		8,729
		<b>SUBTOTAL, OPERATIONAL SYSTEMS DEVELOPMENT, DEFENSE-WIDE</b>	<b>1,152,127</b>	<b>1,205,227</b>	<b>1,181,127</b>	<b>34,200</b>	<b>1,186,327</b>
	999	CLASSIFIED PROGRAMS	3,805,519	3,814,319	3,830,519	0	3,805,519
		<b>Total, RDT&amp;E Defense-Wide</b>	<b>21,499,229</b>	<b>20,822,879</b>	<b>20,924,729</b>	<b>-556,500</b>	<b>20,942,729</b>
		<b>OPERATIONAL TEST &amp; EVALUATION, DEFENSE</b>					
0605118OTE	1	OPERATIONAL TEST AND EVALUATION	53,196	53,196	53,196		53,196
0605131OTE	2	LIVE FIRE TEST AND EVALUATION	11,572	11,572	11,572		11,572
0605814OTE	3	OPERATIONAL TEST ACTIVITIES AND ANALYSES	124,004	124,004	124,004		124,004
		<b>Total, Operational Test &amp; Evaluation, Defense</b>	<b>188,772</b>	<b>188,772</b>	<b>188,772</b>	<b>0</b>	<b>188,772</b>
		<b>TOTAL RDT&amp;E</b>	<b>79,615,941</b>	<b>79,700,433</b>	<b>79,733,380</b>	<b>-1,905,489</b>	<b>77,710,452</b>

*Network science, technology and experimentation center*

The budget request included \$10.0 million in PE 61104A for the establishment of a network science and technology research center. This is an example of the Army's continued commitment to investments in basic research, especially in the face of severe budget constraints due to the current operations and reset of the force. In particular, it is widely expected that new investments in network science can lead to significant enhancements in operational capabilities.

The fact that the current Army plan for this effort calls for the majority of funding to go to the establishment of a single research center is a cause for concern. The National Research Council's 2007 report entitled "Strategy for an Army Center for Network Science, Technology, and Experimentation" concluded that, "based on Army needs, the NSTEC [Network Science, Technology, and Experimentation Center] should be a hybrid operation consisting of two or three centralized facilities having interconnectivity to a variety of distributed supporting elements." The current Army proposed plan and budget is not consistent with this recommended hybrid approach.

The Army is directed to ensure that the network science and technology research center be established so as to leverage the benefits of a distributed and networked research community. Clearly, some funding should be retained to support in-house research efforts, but the majority of funding should continue to go to a networked group of investigators selected on the basis of technical merit of proposed research.

The Army is further directed to ensure that none of the \$10.0 million authorized in PE 61104A for the establishment of a network science and technology research center shall be available for the purpose of infrastructure and facilities development. The fact that basic research funding is a precious and scarce resource places a great emphasis on ensuring its use for designated research purposes. Such funds should not be utilized for infrastructure and facilities development, save for the most exceptional circumstances.

## ITEMS OF SPECIAL INTEREST

*Executive helicopter program (VH-71A)*

The budget request included \$1,047.8 million in PE 64273N for continued development of the executive helicopter, VH-71A. The VH-71A program is intended to provide the replacement helicopter for transportation of the President and Vice President of the United States, heads of state, and other dignitaries. The House report (H. Rept. 110-652) observed that the reported cost increases in the program were sufficient to exceed the 25 percent unit cost increase that would invoke the certification requirements levied by section 2433(e)(2)(A) of title 10, United States Code, commonly referred to as a "Nunn-McCurdy Breach." The House report directed the Secretary of Defense to submit an analysis of potential advantages and disadvantages of conducting a re-competition of the program when the Secretary submits that certification.

The Senate report (S. Rept. 110-335) directed the Secretary of the Navy to submit a VH-71A report to the congressional defense committees outlining VH-71A program:

- (1) performance requirements;
- (2) revised cost estimates;
- (3) causes for cost growth;
- (4) detailed breakout of cost growth related to under-estimated requirements; and
- (5) actions being implemented to reduce and control development and production costs.

The Senate report would also prohibit the Secretary from obligating fiscal year 2009 funds for VH-71A Executive Helicopter Development (PE 64273N) for Increment Two efforts until: (1) the Defense Department completes VH-71A unit cost reporting requirements as prescribed by section 2433 of title 10, United States Code; and (2) the Secretary of the Navy submits the VH-71A report described above to the congressional defense committees.

Additionally, the Senate report directed the Secretary to identify alternatives for extending the service life of Increment One aircraft and increasing their utility in the effort to provide greater return on this investment.

The agreement directs the Secretary to submit the reports requested in both the House and Senate reports, removes the prohibition on obligating any fiscal year 2009 funding, and directs the Secretary not to restructure the existing VH-71 contract until the completion of the Nunn-McCurdy certification process.

*Missile defense force structure and Joint Capabilities Mix studies*

We note that the Joint Integrated Air and Missile Defense Organization, a component of the Joint Staff, has conducted a number of studies over several years concerning the operational requirements of combatant commanders for upper tier ballistic missile defense. These Joint Capabilities Mix (JCM) studies have consistently concluded that U.S. combatant commanders need about twice as many Standard Missile-3 (SM-3) and Terminal High Altitude Area Defense (THAAD) interceptors as the number planned by the Missile Defense Agency (MDA), just to meet their minimum inventory requirements to defend against existing levels of short- and medium-range ballistic missiles.

We are deeply disappointed that the Department of Defense has not planned or budgeted for even this minimum requirement, and believe that achieving at least this minimum inventory should be the highest priority for MDA. We expect the Department of Defense to budget accordingly starting with the budget submission for fiscal year 2010.

We are concerned that there is no adequate requirements process in place for MDA to determine the force structure and inventory levels to meet the needs of the combatant commanders. This is a fundamental shortcoming of the Department of Defense's approach to missile defense, and one that needs to be resolved. We expect the Department of Defense to establish an adequate requirements process for missile defense force structure and inventory that ensures that the operational requirements of the regional combatant com-

manders are fully taken into account in MDA's budget and planning process.

*Missile defense tests and targets*

We are discouraged to note that the Missile Defense Agency (MDA) Test and Targets program has had another disappointing year. MDA failed to conduct a single intercept flight test of the Ground-based Midcourse Defense (GMD) system during fiscal year 2008, and canceled a planned and budgeted GMD flight test, designated FTG-04. Instead, it conducted a sensor flight test, FTX-03. Over the last several years, MDA has not managed to conduct an average of even one GMD intercept flight test per year, despite the fact that Congress has authorized and appropriated over \$200.0 million per year to conduct two flight tests each year.

In addition, a test of the GMD system was aborted in May 2007 when the target failed to reach the necessary altitude, and a flight test of the Terminal High Altitude Area Defense (THAAD) system was aborted on September 17, 2008, when the target missile failed shortly after launch.

We are disappointed to note that MDA chose to cancel FTG-04 without first consulting with any of the key stakeholders, including the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD/AT&L), the Director of Operational Test and Evaluation (DOT&E), or the Commander of United States Strategic Command.

We direct MDA to consult with these organizations, or their designees, prior to any future decision to cancel a flight test, and to report in writing to the congressional defense committees within 1 week of a decision to cancel such a test, indicating the following information: (1) the reasons for the cancellation; (2) the implications and risks for the testing and development program that will result from cancelling the test; (3) a plan describing how the original objectives of the flight test will still be met, notwithstanding the cancellation; (4) the views and recommendations of the organizations consulted; and (5) any modifications in the allocation of budget and testing resources as a result of the cancellation of the flight test.

*Upper tier follow-on to Arrow*

The United States is engaged in a cooperative program with Israel to provide an upper-tier follow-on to the Arrow Weapon System for Israel. There are two systems being pursued under this cooperative program: a land-based version of the existing Standard Missile 3 (SM-3) using an AN/TPY-2 forward-based X-band radar, and the development of a new Arrow-3 interceptor. The SM-3 interceptor and the AN/TPY-2 radar, which is derived from the radar for the Terminal High Altitude Area Defense (THAAD) system, have already been developed and demonstrated. The Arrow-3 has not yet been developed, and its design has changed several times.

After a number of changes to Israeli requirements and the planned performance of the Arrow-3 missile, the Missile Defense Agency (MDA) has chosen to pursue development of the Arrow-3 as the primary approach to developing an upper tier missile defense capability for Israel. However, this would be a technically challenging undertaking, involving a number of critical and complex

technologies that Israel has never produced previously. Consequently, it is not certain that Israel can succeed in the development of all the Arrow-3 technologies in time to meet Israel's required fielding schedule.

We are concerned that MDA has chosen a technically risky path forward, and is not providing sufficient risk mitigation through the land-based SM-3 option. MDA has indicated it intends to pursue an Arrow-3 development strategy based on knowledge points, with the stated intention of being able to curtail or stop the program if it does not meet its knowledge points on schedule.

However, MDA has not demonstrated an ability to reduce funding for other programs that have not met their knowledge points on schedule. This suggests that an Arrow-3 development program could continue to be the primary path even if it does not meet its knowledge points or its schedule, thus precluding the option of having the proven SM-3 and AN/TPY-2 technology serve as a suitable upper tier option on schedule.

Therefore, we direct the Under Secretary of Defense for Acquisition, Technology, and Logistics to review MDA's proposed approach and submit to the congressional defense committees, no later than April 15, 2009, a report providing a plan for risk mitigation for the U.S.-Israel upper tier program of cooperation that provides a cost-effective path to providing an upper tier missile defense capability for Israel.

#### *Wide area airborne surveillance*

The Senate report (110-335) accompanying S. 3001 urged the Department of Defense to rapidly define and acquire next generation wide area airborne surveillance (WAAS) capabilities to augment existing and planned full motion video (FMV) platform deployments, and possibly to help limit the number of additional orbits of FMV aircraft needed in the future.

We are encouraged that the Defense Department at senior levels is focused on the WAAS requirement and the range of potential solutions. However, a number of concerns persist.

While significant funds have been allocated for development of the WAAS collection system, very little money is available for the processing, exploitation, and dissemination of the vast amount of imagery that the WAAS system will produce. This imbalance will prevent effective fielding of a WAAS capability in the timeframe required.

There is confusion as to whether the WAAS system is intended to complement or replace existing and planned deployments of narrow-field-of-view FMV assets. This confusion creates concern and opposition from deployed forces. If it is possible for a WAAS system to substitute for FMV assets, the required performance level (in terms of resolution, frame rate, look angles, and the like) cannot be fielded at least for a period of years. While it is important for the Department to evaluate now what levels of performance might be achievable in subsequent increments of a WAAS program, the near-term focus must be on fielding capabilities that complement existing assets and operate with them in a systems-of-systems network.

In this regard, we are concerned that insufficient attention and resources are being devoted to rapidly fielding a command and control capability that will permit, on a large-scale, integrated operations involving WAAS platforms, FMV assets, and signals intelligence systems across services, national agencies, and various echelons of command. We support the recent initiative by the Air Force WAAS program office to utilize the Network-Centric Collaborative Targeting system, now reaching Initial Operational Capability, as the basis for this important command and control capability.

We direct that, within 90 days of the date on which there is a down select by the WAAS prime integrator, the Deputy Secretary of Defense submit a report to the congressional defense and intelligence committees that characterizes WAAS collection and exploitation requirements, the program increments and funding to meet the requirements, the operational concept for WAAS increments, and the means by which WAAS, FMV systems, and other sensors will be operated together to support the find, fix, and finish targeting process.

#### Subtitle A—Authorization of Appropriations

##### *Authorization of appropriations (sec. 201)*

The House bill contained a provision (sec. 201) that would authorize appropriations for fiscal year 2009 for the use of the Department of Defense for research, development, test and evaluation.

The Senate bill contained a similar provision (sec. 201).

The agreement includes a provision that would authorize appropriations for fiscal year 2009 for the use of the Department of Defense for research, development, test and evaluation.

##### *Authorization for defense science and technology (sec. 202)*

The House bill contained a provision (sec. 202) that would authorize appropriations for fiscal year 2009 for the use of the Department of Defense for science and technology activities.

The Senate bill contained a similar provision (sec. 202).

The agreement includes a provision that would authorize appropriations for fiscal year 2009 for the use of the Department of Defense for science and technology activities.

#### Subtitle B—Program Requirements, Restrictions, and Limitations

##### *Additional determinations to be made as part of Future Combat Systems milestone review (sec. 211)*

The House bill contained a provision (sec. 211) that would amend section 214 of the John Warner National Defense Authorization Act for 2007 (Public Law 109–364) by adding additional determinations to be made by the Secretary of Defense during the Future Combat Systems (FCS) program review.

The Senate bill contained no similar provision.

The agreement includes the House provision.

We intend that the additional determinations required during the FCS program review should be applied with respect to threshold FCS system of system technologies, not surrogates.

*Analysis of Future Combat Systems communications network and software (sec. 212)*

The House bill contained a provision (sec. 212) that would require the Assistant Secretary of Defense, Networks and Information Integration (ASD NII), to conduct an independent study and report to the congressional defense committees by July 1, 2009, on possible vulnerabilities of the Future Combat Systems (FCS) communications network. The purpose of this study is to inform the review of the FCS program mandated by section 214 of the John Warner National Defense Authorization Act for 2007 (Public Law 109-364).

The Senate bill contained no similar provision.

The agreement includes the House provision with an amendment that would provide the Department with additional time to complete the analysis and require the ASD NII to assess, in coordination with the Director of Operational Test and Evaluation, the synchronization of the funding, schedule, and technology maturity of the Warfighter Information Network-Tactical and Joint Tactical Radio System in programs in relation to the FCS program.

*Future Combat Systems manned ground vehicle selected acquisition reports (sec. 213)*

The House bill contained a provision (sec. 213) that would require the Secretary of the Army to submit to the congressional defense committees selected acquisition reports as defined in section 2432(c) of title 10, United States Code, on each of the eight Future Combat Systems (FCS) manned ground vehicle variants. The reports are required by February 15 of each year from 2009 to 2015.

The Senate bill contained no similar provision.

The agreement includes the House provision with a clarifying amendment that would include any additional manned ground vehicle variants designated in FCS Acquisition Reports after the date of enactment.

*Separate procurement and research, development, test, and evaluation line items and program elements for Sky Warrior unmanned aerial systems (sec. 214)*

The House bill contained a provision (sec. 214) that would require the Secretary of Defense to ensure that the Department of Defense program and budget exhibits for the Army's Sky Warrior unmanned aerial system break out that program into separate program elements and line items.

The Senate bill contained no similar provision.

The agreement includes the House provision.

*Restriction on obligation of funds for the Warfighter Information Network-Tactical program (sec. 215)*

The House bill contained a provision (sec. 215) that would restrict obligation of 80 percent of research and development funds authorized for appropriation for the Warfighter Information Net-

work-Tactical, Increment 3 program until 15 days after receipt by the congressional defense committees of certification from the Under Secretary of Defense for Acquisition, Technology and Logistics that the program has an approved acquisition program baseline, a new independent cost estimate, and the Director, Defense Research and Engineering has completed a technology readiness assessment.

The Senate bill contained no similar provision.

The agreement includes the House provision with an amendment that reduces the amount of funding restricted pending the certification from 80 percent to 50 percent and makes other clarifications.

*Limitation on source of funds for certain Joint Cargo Aircraft expenditures (sec. 216)*

The House bill contained a provision (sec. 216) that would require the Secretary of the Army to fund certain expenditures for the Joint Cargo Aircraft (JCA) through procurement or research, development, test and evaluation accounts, rather than from other appropriations accounts.

The Senate bill contained no similar provision.

The agreement included the House provision with an amendment that would modify the provision to place the same requirement on the Secretary of the Air Force.

The report (H. Rept. 110-652) accompanying the House bill noted that, at the time of the report, the Air Force was reporting a unit cost for JCA of \$60.7 million, and was reporting a unit cost for C-130J aircraft of \$56.7 million. After further discussion with the Air Force acquisition officials and clarification of terminology, we believe that a fairer, apples-to-apples comparison of such costs would raise the comparable average procurement unit cost for a C-130J to \$84.2 million, in terms of fiscal year 2007 dollars.

*Requirement for plan on overhead nonimaging infrared systems (sec. 217)*

The Senate bill contained a provision (sec. 211) that would direct the Secretary of the Air Force to develop a comprehensive plan to conduct and support research, development, and demonstration of technologies that could evolve into the next generation of overhead nonimaging systems. The plan would also include an explanation of how such systems would be tested, including any flight or on-orbit testing as well as how and when the technologies would transition to an acquisition program. In addition, the provision would prohibit appropriation of more than 50 percent of the funds authorized to be appropriated for the third generation infrared surveillance program until the plan is submitted to the congressional defense committees.

The House bill contained no similar provision.

The agreement includes the Senate provision with an amendment that would direct the Secretary of Defense and the Director of National Intelligence to conduct the plan. In addition the amendment would add a description of the research, development and demonstration activities, as an additional element to the plan.

*Advanced energy storage technology and manufacturing (sec. 218)*

The Senate bill contained a provision (sec. 212) that would require the Department of Defense to develop a technology and manufacturing roadmap for battery technologies.

The House bill contained no similar provision.

The agreement includes a provision that would expand the scope of the roadmapping exercise to include all relevant energy storage technologies, such as, but not limited to, batteries, fuel cells and capacitors. The provision would further add a requirement for the Department to provide a detailed report of the investment levels in energy storage technologies.

The roadmap development should be primarily lead by the Director of Defense Research and Engineering, the Deputy Under Secretary of Defense for Industrial Policy, and Service Acquisition Executives, so that the roadmap accurately reflects technology development, industrial base, program requirements, and cost drivers. It is further expected that Service acquisition program offices with significant energy storage technology requirements, the Joint Defense Manufacturing Technology Panel, the Defense Logistics Agency, and appropriate organizations within the Department of Energy will all participate in the roadmap development. The roadmap should not focus solely on science and technology activities and existing investments.

It is expected that a thorough understanding of resource allocation and current investment in advanced energy storage technologies will help clarify the investment shortfalls and capability gaps that should be emphasized in the technology and manufacturing roadmap.

*Mechanisms to provide funds for defense laboratories for research and development of technologies for military missions (sec. 219)*

The Senate bill contained a provision (sec. 213) that would authorize the Secretary of Defense to permit laboratory directors to utilize up to 3 percent of laboratory funds for research and development, technology transition, and workforce development activities.

The House bill contained no similar provision.

The agreement includes the Senate provision with an amendment that would terminate the authority after 4 years.

The utilization of this authority and its impact on the mission performance and technical capabilities of the laboratories will be closely monitored by the congressional defense committees. All efforts to supply the needed authorities and resources to the defense laboratories to enable them to effectively and efficiently perform their designated missions are supported and encouraged.

*Requirements for certain airborne intelligence collection systems (sec. 220)*

The Senate bill contained a provision (sec. 215) that would require that each airborne collection system within the Department of Defense that is connected to the Distributed Common Ground/Surface System to have the ability to operate with the Network-Centric Collaborative Targeting System, unless the Chairman of the Joint Requirements Oversight Council waives the requirement on a case-by-case basis.

The House bill contained no similar provision.  
The agreement includes the Senate provision.

*Limitation on obligation of funds for enhanced AN/TPQ-36 Radar System pending submission of report (sec. 221)*

The House bill contained a provision (sec. 236) that would limit the amount of funds provided to the program until the Secretary of the Army provides the congressional defense committees with a plan to transition the Counter-Rockets, Artillery, and Mortars (C-RAM) program to a program of record.

The Senate bill contained no similar provision.  
The agreement includes the House provision.

Subtitle C—Missile Defense Programs

*Annual Director of Operational Test and Evaluation characterization of operational effectiveness, suitability, and survivability of the Ballistic Missile Defense System (sec. 231)*

The Senate bill contained a provision (sec. 234) that would require the annual report of the Director of Operational Test and Evaluation on the testing of the Ballistic Missile Defense System (BMDS) to include a characterization of the operational effectiveness, suitability, and survivability of the BMDS and its elements that have been fielded or tested before the end of the preceding fiscal year.

The House bill contained no similar provision.  
The agreement includes the Senate provision.

*Independent study of boost-phase missile defense (sec. 232)*

The House bill contained a provision (sec. 221) that would require an independent study of boost-phase missile defense programs, specifically the Airborne Laser and the Kinetic Energy Interceptor. The study would assess a variety of relevant factors and compare the results to non-boost-phase missile defense systems. The provision would require the independent study to be submitted to the congressional defense committees.

The Senate bill contained a similar provision (sec. 235).

The agreement includes the House provision with an amendment that would combine elements of the Senate provision with the House provision.

*Limitation on availability of funds for procurement, construction, and deployment of missile defenses in Europe (sec. 233)*

The House bill contained a provision (sec. 222) that would limit the availability of fiscal year 2009 and future funds for procurement, site activation, construction, preparation of equipment for, or deployment of a long-range missile defense system until the following conditions have been met: (1) the Governments of Poland and the Czech Republic have each signed and ratified the necessary agreements allowing for such deployment; and (2) 45 days have elapsed after Congress receives the independent assessment required in section 226 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110-181). The provision would also limit the availability of funds for the acquisition and deploy-

ment of operational interceptor missiles for the planned European deployment until the Secretary of Defense certifies, after receiving the views of the Director of Operational Test and Evaluation, that the interceptor has demonstrated, through successful, operationally realistic flight testing, a high probability of working in an operationally effective manner and the ability to accomplish its mission.

The Senate bill contained a similar provision (sec. 232), with the differences being that it would: (1) limit the effect of the general limitation to the availability of fiscal year 2009 funds; (2) clarify that each host nation would need to give final approval to any missile defense agreements concerning the deployment of missile defense components on its territory; and (3) authorize the initial long lead procurement funds for the proposed European interceptors, since the long-lead components are 100 percent common to the three-stage variant of the interceptor.

The agreement includes a combined provision that would limit the availability of fiscal year 2009 and future funds for procurement, site activation, construction, preparation of equipment for, or deployment of a long-range missile defense system until the following conditions have been met: (1) in the case of the proposed midcourse radar element, the host nation has signed and ratified the agreements needed to allow for the deployment of such radar in the host nation; (2) in the case of the proposed long-range missile defense interceptor element, the condition in paragraph (1) has been met, and the host nation has signed and ratified the agreements needed to allow for the deployment of such interceptor element in the host nation; and (3) 45 days have elapsed after Congress has received the report required by section 226(c)(6) of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181). The provision would also limit the availability of fiscal year 2009 funding for acquisition (other than initial long-lead funding) or deployment of the proposed interceptor until the Secretary provides the certification required in both bills.

*Review of the ballistic missile defense policy and strategy of the United States (sec. 234)*

The Senate bill contained a provision (sec. 231) that would require the Secretary of Defense to conduct a review of the ballistic missile defense policy and strategy of the United States. The provision would require the Secretary to submit a report to Congress not later than January 31, 2010, setting forth the results of the review.

The House bill contained no similar provision.

The agreement includes the Senate provision with an amendment that would add several elements to be required in the review.

*Airborne Laser System (sec. 235)*

The Senate bill contained a provision (sec. 233) that would require the Director of Operational Test and Evaluation (DOT&E) to assess and report on the operational effectiveness, suitability, and survivability of the Airborne Laser (ABL) System. The provision would also limit the availability of funds for procurement of a second or subsequent ABL aircraft until the Secretary of Defense, after receiving the DOT&E assessment, submits a certification that

the ABL system has demonstrated a high probability of being operationally effective, suitable, survivable, and affordable.

The House bill contained a provision (sec. 221) that would, among other things, prohibit the use of funds to acquire a second ABL aircraft until 60 days after Congress receives an independent study on boost-phase missile defense programs required by the provision.

The agreement includes the Senate provision with an amendment that would incorporate the House funding prohibition into the Senate provision.

*Activation and deployment of AN/TPY-2 forward-based X-band radar (sec. 236)*

The Senate bill contained a provision (sec. 237) that would authorize the use of up to \$89.0 million in funds for defense-wide research, development, test, and evaluation for the activation and deployment of an AN/TPY-2 X-band radar to a classified location. It would also require the Secretary of Defense to submit a report to Congress on such deployment before the funds would be available for the deployment.

The House bill contained no similar provision.

The agreement includes the Senate provision.

Subtitle D—Reports

*Biennial reports on joint and service concept development and experimentation. (sec. 241)*

The Senate bill contained a provision (sec. 252) that would reduce the reporting requirement on Department of Defense concept development and experimentation activities and include reporting on related activities of the military services.

The House bill contained no similar provision.

The agreement includes the Senate provision with an amendment that would clarify the reporting requirements.

The joint and service level for concept development and experimentation activities can support efforts at innovation and transformation in doctrine, training, materiel acquisition and other areas of Departmental activity. As the executive agent for joint warfighting experimentation, the Commander of United States Joint Forces Command has a unique ability and responsibility to use the results of the Department's various concept development and experimentation activities to advocate for the transformation of investment strategies, defense acquisition policies, requirements generation, doctrine development, and force structure to enhance joint warfighting capabilities.

*Report on the participation of the historically black colleges and universities and minority serving institutions in research and educational programs and activities of the Department of Defense (sec. 242)*

The House bill contained a provision (sec. 232) that would require an assessment of the Historically Black Colleges and Universities (HBCU/MI) and Minority Serving Institutions program.

The Senate bill contained no similar provision.

The agreement includes a provision that would require an independent assessment of the participation of HBCU/MI, Hispanic Serving Institutions, Tribal Colleges and Universities, and other minority postsecondary institutions in Department of Defense research, training, and educational activities.

At a time when the Department and the nation are facing a shortage of personnel in growing areas of science and engineering, this community of educational institutions and the population they serve can make a valuable contribution to the missions of the Department of Defense.

*Report on Department of Defense response to findings and recommendations of the Defense Science Board Task Force on Directed Energy Weapons (sec. 243)*

The Senate bill contained a provision (sec. 255) that would require the Department of Defense to report on responses to the findings and recommendations of the Defense Science Board Task Force on Directed Energy Weapons.

The House bill contained no similar provision.

The agreement includes the Senate provision with a clarifying amendment.

#### Subtitle E—Other Matters

*Modification of systems subject to survivability testing oversight by the Director of Operational Test and Evaluation (sec. 251)*

The House bill contained a provision (sec. 231) that would clarify the responsibilities of the Secretary of Defense and the Director of Operational Test and Evaluation with respect to oversight and reporting on survivability testing for personnel protective equipment and other defense systems.

The Senate bill contained a similar provision (sec. 251).

The agreement includes the House provision with an amendment that would allow the Secretary of Defense to authorize the Director of Operational Test and Evaluation to perform statutorily mandated monitoring and reporting on a broader range of defense systems. The amendment makes additional clarifying amendments to sections 2366 and 139 of title 10, United States Code. This provision will enable the Secretary and Director to have appropriate levels of oversight of systems that require survivability and lethality testing, including certain items of personnel protective equipment and non lethal weapons. It is expected that the acquisition and testing community should continue to work together to develop and adequately test systems to validate their operational effectiveness, suitability and survivability, but still deliver new capabilities in a rapid and efficient fashion.

*Technology-neutral information technology guidelines and standards to support fully interoperable electronic personal health information for the Department of Defense and Department of Veterans Affairs (sec. 252)*

The House bill contained a provision (sec. 233) that would amend section 1635 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181) to add additional reporting re-

quirements to the annual report required by that section. The provision would also require the Director of the Department of Defense-Department of Veterans Affairs Interagency Program Office to report within 12 months after the date of enactment of this Act on the development of information technology infrastructure guidelines and standards for use by the Departments of Defense and Veterans Affairs to enable fully interoperable electronic personal health information.

The Senate bill contained no similar provision.

The agreement includes the House provision with an amendment that would eliminate the requirement for reporting to the appropriate congressional committees on the specific guidelines and standards developed or adopted under this provision.

The Department of Defense and Department of Veterans Affairs should, to the extent practicable, pursue guidelines and standards that are consistent with other similar ongoing federal efforts and with relevant guidance and directives for the development of information technology (IT) systems in the Department of Defense and Department of Veterans Affairs.

Within the Department of Defense, the medical IT community should work closely with Assistant Secretary of Defense for Networks and Information Integration and the Business Transformation Agency, both of which have valuable experience in evaluating and selecting standards for large-scale enterprise systems.

*Assessment of technology transition programs and repeal of reporting requirement. (sec. 253)*

The House bill contained a provision (sec. 234) that would require the Department of Defense to assess the feasibility of consolidating various technology transition accounts into a unified effort. The House provision would also repeal the requirement for the Technology Transition Initiative (TTI).

The Senate bill contained a provision (sec. 253) which would repeal the recurring reporting requirement relating to the TTI program.

The agreement includes a provision which requires the Under Secretary of Defense for Acquisition, Technology and Logistics (USD (AT&L)) to assess the feasibility of consolidating technology transition accounts into one account to be managed at the Department-level. The agreement also requires the USD (AT&L) to submit a report to Congress on the aforementioned assessment and include recommendations concerning the streamlining and improvement of technology transition activities throughout the Department. Finally, the agreement repeals the Department's annual TTI reporting requirement.

Efficient technology transition is a mainstay of the Department's ability to deliver military advantage to the operational force. Continued employment of the current regime of initiatives and programs may not be the most effective approach to transitioning promising technologies to the force. The USD (AT&L) is expected to characterize the limitations of the existing transition activities and provide recommendations to improve the process of transitioning technologies. The overall goals of the various Department of Defense technology transition programs are laudable, but

there is a need to better understand the Department's requirements for additional authorities or for the repeal of unnecessary authorities that could improve technology transition.

*Trusted defense systems (sec. 254)*

The House bill contained a provision (sec. 235) that would require the Department of Defense to perform an assessment, develop a strategy, issue interim policy guidance, and provide a report to Congress related to assuring trust in the supply chain for certain defense systems.

The Senate bill contained a related provision (sec. 256) that required an assessment of the capabilities of the Department to assess trust in semiconductor technologies.

The agreement includes a provision that requires the Secretary of Defense to assess the trust in, and vulnerabilities within the supply chain of key electronic components of major defense acquisition programs; to assess methods for verifying trust of DoD semiconductors; to produce a strategy for managing supply chain risk and trust verification for semiconductors; to establish policies necessary to support these activities; and to report to Congress on the assessment and policies.

There is growing concern that major manufacturing for many mission-critical semiconductors has moved offshore, primarily to Asia. The inherent risks associated with procuring electronic components that have been designed, fabricated, tested, or packaged in unsecure facilities abroad demand a well planned and structured response.

Therefore, the Secretary is instructed to coordinate the various current efforts designed to study and protect mission-critical electronic components and create an integrated strategy for managing supply chain risk and ensuring trust of semiconductors used in applications across all services. Only by engaging in consultation with industry, academia and other agencies will the Department be able to fashion the cross-cutting strategy needed to address a challenge that confronts the most complicated and important acquisition programs and threatens every part of the operational force.

*Capabilities-based assessment to outline a joint approach for future development of vertical lift aircraft and rotorcraft (sec. 255)*

The House bill contained a provision (sec. 237) that would require the Secretary of Defense and the Chairman of the Joint Chiefs of Staff to develop an assessment of a joint approach to developing future vertical lift aircraft and rotorcraft, and to submit a report on that assessment.

The Senate bill contained no similar provision.

The agreement includes the House provision, with the understanding that the current program for modernizing the Marine Corps' heavy lift rotorcraft fleet shall not be subsumed within any joint program office that might emerge from this assessment.

*Executive agent for printed circuit board technology (sec. 256)*

The Senate bill contained a provision (sec. 254) that would require the establishment of an executive agent to oversee Depart-

ment of Defense activities related to printed circuit board technologies.

The House bill contained no similar provision.

The agreement includes the Senate provision with an amendment that requires the Secretary of Defense to designate an executive agent for printed circuit board and interconnect technologies. The provision specifies roles and responsibilities that the Secretary of Defense will charge to the executive agent.

The Secretary may include further duties, especially as they may pertain to ensuring that the Department maintains and grows its capability for establishing trust in interconnect technologies. While it is critical that the executive agent designated by the Secretary develop a well-planned roadmap which details current and future technologies needed and the logistics network necessary to provide them, the executive agent should also draw together the specific timeline that must be realized and funding that must be obtained to successfully implement the roadmap going forward.

Finally, the provision directs the Secretary of Defense to ensure that the executive agent is properly resourced to implement the task and is supported throughout the military departments.

*Review of conventional prompt global strike technology applications and concepts (sec. 257)*

The House bill contained a provision (sec. 238) that would limit the use of funds for conventional prompt global strike (PGS) in fiscal year 2009 to only those activities expressly delineated in the expenditure plan for fiscal years 2008 and 2009, which was required by section 243 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110-181) or activities otherwise expressly authorized by Congress. The expenditure plan was transmitted to the congressional defense committees on March 24, 2008. The provision would also require the Secretary of Defense to submit a report on PGS concepts with the fiscal year 2010 budget request.

The Senate bill contained a similar provision (sec. 1054) that would direct the Secretary of Defense, in consultation with the Secretary of State, to conduct a review of the prompt global strike technologies that will be demonstrated beginning in fiscal year 2010. The report would set forth the cost of the demonstration, identify any legal, treaty, or policy related issues that might be associated with the concept demonstrated or the demonstration itself, and whether and to what extent there is a possibility that the concept or the demonstration itself could be confused with a nuclear weapons system. In addition, the report would set forth a description of the types of targets against which the concept demonstrated might be used. The report would be submitted to the congressional defense committees no later than 30 days after the date on which the budget is submitted.

The agreement includes the Senate provision with an amendment that would limit the use of funds for conventional PGS in fiscal year 2009. The amendment would also direct the Secretary of Defense to submit a report to the congressional defense committees that describes the technologies planned to be developed during fiscal year 2009 and how those technologies relate to PGS options and concepts. The due date for this report would be April 1, 2009.

In addition, the amendment would modify the review and assessment to be conducted by the Secretary of Defense in consultation with the Secretary of State, to include recommendations that would mitigate such risk in the assessment as to whether a PGS concept could be misconstrued as a nuclear weapon or delivery system. The amendment would further modify the assessment to include an assessment of the intelligence needed to support the use of any PGS concept. A report on this review and assessment would be due no later than September 1, 2009.

We note that the Department of Defense has expressed interest in examining biconic technology as part of an alternative re-entry system/warhead engineering and delivery vehicle options/development but included no plan to manufacture a biconic vehicle in the expenditure plan for fiscal years 2008 and 2009. As a result no funds are available in fiscal year 2009 to manufacture such a vehicle.

We note that the Department is approaching a PGS concept definition milestone in the fiscal year 2010 timeframe. We encourage the Department to weigh carefully all aspects of PGS concept alternatives, including the technical, cost, operational, and policy considerations associated with each option.

We note that the National Research Council of the National Academy of Sciences has recently completed a report titled "U.S. Prompt Global Strike: Issues for 2008 and Beyond." This report was prepared at the request of Congress. The Department should review this and other PGS related reports as part of the process to determine which PGS concept alternatives to pursue.

We direct the Secretary to submit a copy of the report to the Committee on Foreign Affairs of the House of the Representatives and the Committee on Foreign Relations of the Senate.

#### LEGISLATIVE PROVISIONS NOT ADOPTED

##### *Assured funding for certain information security and information assurance programs of the Department of Defense*

The Senate bill contained a provision (sec. 214) that would provide a source of funding for a new technology development activity for information security.

The House bill contained no similar provision.

The agreement does not include the provision.

##### *Study on space-based interceptor element of ballistic missile defense system*

The Senate bill contained a provision (sec. 236) that would require an independent entity to conduct an assessment of the feasibility and advisability of developing a space-based interceptor element to the ballistic missile defense system.

The House bill contained no similar provision.

The agreement does not include the Senate provision.

*Visiting National Institutes of Health senior neuroscience fellowship program*

The House bill contained a provision (sec. 239) that would establish a visiting National Institutes of Health neuroscience fellowship within the Department of Defense.

The Senate bill contained no similar provision.

The agreement does not include the provision.

Neuroscience can play an important role in improving capabilities in combat casualty care, addressing traumatic brain injuries and post traumatic stress disorders, decision making, and human-machine interfaces, among other areas. The Department of Defense is directed to continue to support research in this area, including expanding collaboration with the National Institutes of Health on research, personnel exchanges, technology transition, and other activities.

**TITLE III—OPERATION AND MAINTENANCE**