Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Office of Secretary Of Defense	DATE: February 2011
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 6: *RDT&E Management Support*	R-1 ITEM NOMENCLATURE PE 0605130D8Z: *Foreign Comparative Testing*

COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	33.155	32.755	19.080	-	19.080	19.204	19.792	30.181	32.095	Continuing	Continuing
P130: *FCT*	33.155	32.755	19.080	-	19.080	19.204	19.792	30.181	32.095	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Foreign Comparative Testing (FCT) Program supports the warfighter by leveraging mature technologies and equipment from allied nations and coalition partners to satisfy U.S. defense requirements, thereby accelerating the U.S. acquisition process and lowering development costs. Authorized by Title 10, U.S. Code, Section 2350a(g), the FCT Program is managed by the Office of Secretary of Defense (Rapid Fielding Office), Comparative Technology Office (CTO). FCT projects are nominated by the Services and U.S. Special Operations Command (USSOCOM) each year. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements, a thorough market survey, and development of a viable acquisition strategy. A seven-day Congressional notification of the intent to fund the projects is required, prior to the issuance of funds to the Services and USSOCOM for execution.

B. Program Change Summary ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
Previous President's Budget	34.771	32.755	33.048	-	33.048
Current President's Budget	33.155	32.755	19.080	-	19.080
Total Adjustments	-1.616	-	-13.968	-	-13.968
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-1.000	-			
• SBIR/STTR Transfer	-0.563	-			
• Other Adjustments	-0.053	-	-	-	-
• Defense Efficiency – Baseline Review	-	-	-11.199	-	-11.199
• Defense Efficiency - Report, Studies, Boards, and Commissions	-	-	-0.553	-	-0.553
• Defense Efficiency – Civilian Staffing Reduction	-	-	-1.250	-	-1.250
• Defense Efficienty - Contractor Staff Support	-	-	-0.935	-	-0.935
• Economic Assumptions	-	-	-0.031	-	-0.031

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Change Summary Explanation

Defense Efficiency – Baseline Review. As part of the Department of Defense reform agenda, implements a zero-based review of the organization to align resources to the most critical priorities and eliminate lower priority functions.

Defense Efficiency – Report, Studies, Boards and Commissions. As part of the Department of Defense reform agenda, reflects a reduction in the number and cost of reports, studies, DoD Boards and DoD Commissions below the aggregate level reported in previous budget submission.

Defense Efficiency – Civilian Staffing Reduction. As part of the Department of Defense reform agenda, eliminates civilian full-time equivalent positions to maintain, with limited exceptions, civilian staffing at the FY 2010 level.

Defense Efficiency – Contractor Staff Support. As part of the Department of Defense reform agenda, reduces funds below the aggregate level reported in the previous budget submission.

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COST ($ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
P130: *FCT*	33.155	32.755	19.080	-	19.080	19.204	19.792	30.181	32.095	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

The Foreign Comparative Testing (FCT) Program supports the warfighter by leveraging mature technologies and equipment from allied nations and coalition partners to satisfy U.S. defense requirements, thereby accelerating the U.S. acquisition process and lowering development costs. Authorized by Title 10, U.S. Code, Section 2350a(g), the FCT Program is managed by the Office of Secretary of Defense (Rapid Fielding Office), Comparative Technology Office. FCT projects are nominated by the Services and U.S. Special Operations Command (USSOCOM) each year. Evaluation processes for project selection include a detailed review to confirm the proposed item addresses valid requirements, a thorough market survey, and development of a viable acquisition strategy. A seven-day Congressional notification of the intent to fund the most meritorious projects is required, prior to the issuance of funds to the Services and USSOCOM for execution.

Since the program's inception in 1980, Office of Secretary of Defense (OSD) has initiated 630 projects; 551 projects have been completed to date. Of the 266 evaluations that met the sponsors' requirements, 218 led to procurements worth approximately $10.400 billion in FY 2010 constant year dollars. With an Office of Secretary of Defense investment of about $1.170 billion, the FCT Program realized an estimated RDT&E cost avoidance of $7.800 billion in FY 2010 constant year dollars.

The FCT Program is a catalyst for teaming or other business relationships between foreign and U.S. industries. Many successful FCT projects result in the licensed production of the qualified foreign item in the U.S. Other nations recognize the long-term value of such practices for competing in the U.S. defense market and the resultant strengthening of the "two-way street" in defense procurement. For the U.S., the result often means the creation of jobs and contributions to local economies. To date, companies across 33 states benefited from FCT projects.

Final selection of FY 2012 FCT new start projects will be determined in September 2011.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Title: 25mm Round for Joint Strike Fighter (JSF)/F-35 (Air Force)	0.222	-	-
Description: Qualifies a 25mm round for the Joint Strike Fighter (JSF) gun. A Dual-purpose 25mm x 137 medium caliber ammunition round manufactured by RWM Schweiz (Rheinmetall Defense) AG in Switzerland will be tested by the 28th Test Wing at Eglin Air Force Base. The primary outputs are to satisfy the US Air Force F-35/A gun system requirement of defeating soft targets and lightly armored vehicles with a single ammo type. No round is currently qualified to meet the unique lethality requirements for the JSF.			
FY 2010 Accomplishments:			

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Technical evaluation completed. Contracted for qualification test effort. Developed programmatic and contractual documentation required for contract award for rounds. Procured ammunition and initiated qualification testing. ***FY 2011 Plans:*** Complete qualification testing 4Q FY 2011. ***FY 2012 Plans:*** Complete Weapons Safety Review process. Obtain production decision and fielding and deployment release. Publish all test reports.			
Title: 40mm L60 High Explosive Incendiary (HEI) (Special Operations Command) ***Description:*** Qualifies multiple sources of 40mm L60 High Explosive Incendiary (HEI) ammunition for the AC-130 gunship. Air Force Special Operations Command (AFSOC)planned to replace its Bofors 40mm cannon with a 30mm Bushmaster but due to fire control integration issues, AFSOC is no longer pursuing that option. The 40mm ammunition replacement is now a critical requirement as the current 40mm ammunition inventory is rapidly depleting at the current rate of usage. The primary outputs are one or more qualified sources for 40mm L60 HEI ammunition. ***FY 2010 Accomplishments:*** Completed program management reviews at all vendor production facilities and witnessed vendor demonstrations. Received test article rounds, fuzes, and fuzed projectiles bodies from all vendors. Conducted technical testing. ***FY 2011 Plans:*** Conduct operational testing, prepare test reports. Review test results and select production manufacturers. Obtain fielding and deployment release. Obtain munitions safety review certification. Obtain Milestone C decision, execute production options, and prepare Foreign Comparative Testing closeout report in 2Q FY 2011.	0.916	0.217	-
Title: A-10 / F-16 Three Dimensional Audio Integration (Air Force) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test and qualify a three dimensional audio system for the A-10 and F-16 Block 30 platforms. This system will incorporate active and electronic noise reduction, spatial separation of multiple radio channels from multiple sources, and three dimensional threat audio cueing from on-board threat detection systems. The primary output is that 3D audio automatically sorts and presents information spatially in real time to the pilot. This dramatically increases situational awareness and allows the pilot to respond quicker by reducing pilot and information overload. In addition, audio systems currently installed in both the A-10 and the F-16 do not have active or electronic noise reduction capability. Noise reduction all but eliminates outside engine and other noise clutter thus enhancing and facilitating audio communication to the pilot.	-	4.015	2.409

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
FY 2011 Plans: Award contract for test article and initiate test planning. ***FY 2012 Plans:*** Initiate and complete technical and integration testing and initiate field user evaluation by the end of 2Q FY 2012. Complete field user evaluation by the end of 3Q FY 2012. Finalize technical test report and production decision by the end of 4Q FY 2012.			
Title: Accurate Low Cost Inertial Navigation Improvement (ALCINI) (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test and evaluate a low cost Inertial Navigation System (INS) that provides higher weapons systems availability than legacy units in U.S. Navy ships and submarines. Expected benefits include the mitigation of performance challenges associated with weapon system alignment, supporting with new mission requirements and reduced Total Ownership Cost (TOC). ***FY 2011 Plans:*** Receive test articles by the end of 3Q FY 2011. Complete test plan development 4Q FY 2011. Conduct performance testing 4Q FY 2011 to 2Q FY 2012. ***FY 2012 Plans:*** Continue performance testing through 2Q FY 2012. Finalize other lab tests and assessment report during 3Q to 4Q FY 2012.	-	1.491	0.095
Title: Advanced Coatings for Small Arms (Special Operations Command) ***Description:*** Validates an advanced coating solution to small arms barrels that significantly improves barrel life, maintains accuracy over extended time, and provides visual wear indications of the end of barrel life. Advanced coatings also improve the life of suppressing devices typically used with sniper and assault rifles. The primary outputs are lifecycle performance test reports for two sniper weapons, the 0.300 Winchester Magnum and 0.50 caliber MK15 MOD 0 barrels, coated with the patented advanced internal coating on the barrel and suppressors. The M2 Heavy Barrel .50 caliber machine gun will also be coated and evaluated. ***FY 2010 Accomplishments:*** Submitted test summary plan and spend plan. Published proposal solicitation and selected vendor to participate in FCT. ***FY 2011 Plans:*** Award contract and ship barrels to vendor coating facility. Conduct project and test planning. Conduct engineering review of vendor data. Continue to analyze vendor data. ***FY 2012 Plans:***	1.005	0.737	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Receive coated barrels at Naval Surface Warfare Center Test Facility, Crane, Indiana. Perform operational testing and submit test reports, Milestone C decision to Milestone Decision Authority 4Q FY 2012. Submit Foreign Comparative Testing closeout report.			
Title: Airborne Stand-Off Radar (ASTOR) Precision Targeting (PT) (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Provide the Distributed Common Ground System – Navy (DCGS-N) and Marine Corps (DCGS-MC) with a capability to receive in near real-time, via Common Data Link (CDL) antenna systems, Intelligence, Surveillance, and Reconnaissance (ISR) data from Royal Air Force (RAF) Airborne Stand-Off Radar (ASTOR) platforms. The primary outputs of the ASTOR System aboard the Sentinel Aircraft are Synthetic Aperture Radar (SAR) images and Moving Target Indicator (MTI) contacts. Software modifications to the ISR processing, exploitation, and dissemination (PED) components currently used by DCGS-N will be implemented and tested to verify that ISR data from ASTOR Systems can be rapidly received, processed, screened for potential mission application, and exploited to produce targeting data that can be used by US weapon systems. This capability will allow US forces to leverage coalition ISR assets and reduce mission requirements for US ISR platforms. ***FY 2011 Plans:*** Establish contracts with US and UK support teams 2Q FY 2011. Investigate ASTOR processing and exploitation capabilities and begin software transfer and development on US DCGS components 3Q FY 2011. Coordinate plans for flight testing and evaluation to commence in 1Q FY 2012. ***FY 2012 Plans:*** Flight testing and evaluation through 1Q FY 2012. Complete validation analysis 3Q FY 2012. Deploy to DCGS-N and DCGS-MC units end of 4Q FY 2012.	-	1.804	1.446
Title: Airborne Tactical Extraction Platform (Special Operations Command) ***Description:*** Test an extraction platform that is capable of extracting up to ten people rapidly, from locations where rotorcraft cannot safely land. Existing airborne extraction systems are only capable of removing three individuals at a time. The primary outputs are a rotary wing extraction system that can accommodate up to 3,306 pounds of equipment and operators, allow operators to engage the enemy during extraction, and is simple to use. Fielding reduction is greater than seven years. ***FY 2010 Accomplishments:*** Completed procurement contract and took delivery of test articles. Conducted validation/technical testing and published test reports. Obtained material safety release. ***FY 2011 Plans:***	-	0.126	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Conduct operational testing and produce test reports. Obtain fielding and deployment release. Complete Foreign Comparative Testing closeout report 3Q FY 2011.			
Title: Arresting System for F-22 and Joint Strike Fighter (JSF)(Air Force) ***Description:*** Test a complete dual-disc BC11 braking system, including all associated hardware, software, and required spare consumables. Headquarters Air Combat Command/A7OI, Langley Air Force Base, Virginia will evaluate the BC11 computer-controlled caliper-disk aircraft arresting system from Scama of Vderstad, Sweden. The current 40 year old BAK-12 aircraft arresting system has become overburdened; it cannot be adjusted to safely stop an F-22 throughout the F-22's full operational range of stopping speeds and the lighter-weight F-16 without over stressing the tail hook and airframe. The BC11's computer controls include extensive self-diagnostics and would provide feedback to the airfield tower, as well as automated recordkeeping. Also, the system also would require significantly less maintenance and support, which in turn would result in overall lower life-cycle costs. ***FY 2011 Plans:*** Contract for test site and testing support at Navy Lakehurst. ***FY 2012 Plans:*** Conduct 130 dead-load runs at various speeds and angles, review test report, and procurement decision.	-	1.804	-
Title: Ballistic Fiber Evaluation for Soft Body Armors (Army) ***Description:*** Test recently developed ballistic aramid fibers that ballistic results show the ballistic performance measure for 9 mm handgun and fragments are much higher than currently used Kevlar and Twaron of the same weight. Initial ballistic testing has shown that it is 27 percent lighter than current Army's ballistic package. The primary output is a full scope evaluation of new ballistic fiber manufactured in a United Kingdom factory. The evaluation includes ballistic performance specifications, i.e. multiple grain fragmentation and 9 mm handgun. Additionally, the fiber will be evaluated for physical and mechanical properties, environmental effect, aging effect, and degradation. The objective is a new ballistic fiber for soft armor to reduce ballistic material weight by as much as 25 percent; and Prototype the Army standard soft armor Improved Outer Tactical Vest (IOTV) for operational testing and evaluation. ***FY 2010 Accomplishments:*** Test article contract awarded 3Q FY 2010. Safety release in 4Q FY 2010. Combined development and operational testing for 4Q FY 2010 and procurement decision for test article fabric samples 1Q FY 2011. ***FY 2011 Plans:***	0.313	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Continue testing and evaluation of prototypes including ballistic, mechanical/physical, environmental, and human factor testing. After successful testing, PM will initiate Berry Amendment waiver request through the official channel. Once approved, a modification on soft armor specification will be recommended to have lighter weight requirement.			
Title: Ceramic Tile Testing and Evaluation for Hard Body Armors (Army) ***Description:*** Tests new light-weight armor, Experimental Small Armor Protective Inserts (XSAPI), using Silicon Carbide (SiC) made by various foreign vendors with domestic SiC armor, to meet US Army's production needs. The Saint Gobain candidate has tested successfully and is in production for XSAPI. Contract value (five year) max quantity is 2,400,400 plates with a max value of $1.400 billion. The primary output is a new hard armor, XSAPI, with higher levels of ballistic projection than current SAPI with minimum weight increase. ***FY 2010 Accomplishments:*** Testing and evaluation has been completed for the following candidates: Hocheng, Schunk, Taiwan Steel, Saint Gobain (first round). Conducted second round ballistic testing on Nova Crystal samples. Conducted testing on light-weight samples from Saint Gobain. In 4Q FY 2010 tested Israeli Military Industries and Fedur (Spain) products. ***FY 2011 Plans:*** Continue to test remaining Saint Gobain plates. Complete testing and evaluation on IMI and Fedur plates.	0.447	-	-
Title: Color Digital X-Ray (Air Force) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test and qualification of a non-destructive testing system that will enable the detection, characterization, and quantification of flaws in and under coatings that are used on military components. The candidate technology incorporates a unique software solution that extends the usefulness of standard digital X-Ray. The software component translates the digital X-Ray's shades of gray into user defined, and meaningful color mapping allowing quick and efficient characterization. The primary output The Color Digital X-Ray technology advanced in this proposal provides a real-time snapshot of the entire component profile. The colors presented are calibrated to identify only those anomalies that warrant operator attention, resulting in an increase of Probability of Detection and decrease of Probability of Miss. ***FY 2011 Plans:*** Award contract for test article, initiate technical testing. ***FY 2012 Plans:*** Complete technical testing and initiate field user evaluation 3Q FY 2012. Complete field user evaluation 3Q FY 2012. Finalize technical test report and production decision 4Q FY 2012.	-	0.921	1.014
Title: Containerized, Deployable Rigid Walled Shelters (CDRWS) (Army)	1.999	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Evaluates commercial-off-the-shelf containerized rigid wall shelters in an operational environment, with the purpose of determining if systems will satisfy Army Central Command (ARCENT) and Force Provider requirements for shelters. These shelter systems provide billeting and/or office configurations for robust temporary facilities replacing expeditionary soft walled shelters. The primary outputs are superior shelters and increased shelter production capacity; competitive foreign and domestic production sources; and shelters meeting safety standards and military requirements. ***FY 2010 Accomplishments:*** Completed Technical Testing and Operational Testing for three foreign shelter designs and one domestic design. Technical Testing conducted at Aberdeen Proving Ground (APG) and Operational Testing conducted at Isa Air Force Base (AFB) in Bahrain to support procurement decisions. ***FY 2011 Plans:*** Complete transportation and environmental testing. Evaluate the suitability of shelters by 2Q FY 2011. Procurement decision 3Q FY 2011.			
Title: Cyber Defense for C4I Networks (CDCN) (Navy) ***Description:*** Provide the US Navy an integrated information technology system for Cyber Defense of C4I Networks. The Commander, Pacific Fleet's Urgent Operational Needs Statement (UONS), requires a technical solution for network visualization, anomaly detection and response and the ability to query stored network traffic for information of interest. The primary outputs are a real-time detection and post event analysis for managing the security of complex networks; effective and efficient management of the Global Information Grid (GIG); and ability to quickly find, access, retrieve, and analyze information related to the operational health, performance, security, and mission readiness of the GIG. ***FY 2010 Accomplishments:*** Market investigation and down select completed 3Q FY 2010. Completed test plan 4Q FY 2010. ***FY 2011 Plans:*** Conduct operational user testing and assessment during 2Q FY 2011. Provide technical test report 3Q FY 2011. Submission of final decision packet in 4Q FY 2011.	1.719	0.842	-
Title: Deployable Runway Rubber Removal System (Air Force) ***Description:*** Evaluate a system that uses water to lift rubber deposits and paint from airfield pavement surfaces to restore runway friction and safe operating runway surfaces for military aircraft. Removal system is equipped with a vacuum to remove runway debris and mitigate foreign object debris damage to airplanes. The primary output is a deployable, Ultra-High Pressure (UHP) water runway rubber and paint removal system. The system uses 60 percent less water than the current system and completes	0.505	0.673	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
rubber removal in half of the time, with half of the manpower. The UHP System can evacuate the runway in the event of an emergency landing, while the current system cannot. ***FY 2010 Accomplishments:*** Contracted for test article, preliminary test planning and training. ***FY 2011 Plans:*** Technical testing followed by operator/user testing. Prepare test report and decision package. Procurement of product.			
Title: Digital – Battle Management Application (D-BMA) (Navy) ***Description:*** Test a Digital – Battle Management Application (D-BMA) that is an integrated Command and Control application that provides digital mapping and unit position locations output by the Global Command and Control System. The D-BMA provides combat functionality for transmission of digital orders, conducting mission planning, and enhancing combat situational awareness and effectiveness. Provides the United States Marine Corps (USMC) real-time terrain association of tactical data, and support mission planning, rehearsal, and combat operations while providing enhanced combat capability through an optimized, digital command and control. The primary outputs are reduced sensor to the shooter time; decreased cycle time between targets; and is provided faster and with more accuracy. ***FY 2010 Accomplishments:*** Completed contract award 3Q FY 2010. Completed test planning at the end of 3Q FY 2010. ***FY 2011 Plans:*** Receive test articles 1Q FY 2011. Initiate lab/integration testing at the beginning of 2Q FY 2011 and complete software accreditation mid 2Q FY 2011. Complete lab/integration and initiate technical testing efforts at beginning of 3Q FY 2011. Complete technical testing and initiate field user evaluation beginning 4Q FY 2011. ***FY 2012 Plans:*** Complete Procurement Decision and Finalize Technical Report during 1Q FY 2012.	1.675	0.982	-
Title: Electric Start & Generator System (ESGS) for Gas Turbines (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** The Electric Starter and Generator System (ESGS) comprises a starter motor/generator, a flywheel and controls to allow rapid restart of ship's gas turbine generators from dark ship scenarios. These scenarios arise from the absence of ship's power due to grid failure, a direct hit, or system malfunction. It has an 8:1 weight savings over the pneumatic counterpart.	-	1.064	0.358

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
On a shipboard application, the ESGS allows each engine to start independently, providing several alternatives for power and propulsion without the need to align other systems prior to a start event. ***FY 2011 Plans:*** Contract award in 2Q FY 2011. Complete test planning and Mission Readiness Plan (MRP) throughout 3Q to 4Q FY 2011. Fabricate the ESGS, conduct Original Equipment Manufacturer (OEM) testing, complete the Critical Design Review, and receive the ESGS units in 3Q to 4Q FY 2011. ***FY 2012 Plans:*** Conduct all test phases 1Q to 2Q FY 2012. Issue an ESGS test report on test findings in 3Q FY 2012. Procurement decision and issue closeout report in 3Q FY 2012.			
Title: Enhanced Fuze for 70mm Warhead (Special Operations Command) ***Description:*** Test an electronic time delay mode which allows the pilot to change fuze settings in-flight and engage a wider range of targets. Special Operations Little Bird helicopter pilots are missing targets of opportunity, and shooting through targets due to the inability to reset their rocket fuzes once airborne. The primary outputs are increased capability to defeat a variety of structures and reduced dependence on Joint Direct Attack Munitions and Hellfire Rockets. An Indefinite Delivery, Indefinite Quantity (IDIQ) Contract was established for 70mm rockets and fuzes. Fielding reduction is greater than seven years. ***FY 2010 Accomplishments:*** Completed vendor negotiation and issued contract for test articles. Vendor testing was initiated to address fuze failures and to refine a final design of the initiation system for the fuze. Obtained rockets for the live fire testing. ***FY 2011 Plans:*** Conduct Phase One technical testing. Obtain safety release and Airworthiness Certification. Gain Weapon System Explosives Safety Review Board approvals, which includes Hazards of Electromagnetic Radiation to Ordnance and Electro Static Discharge. ***FY 2012 Plans:*** Conduct Phase Two operational testing and user assessment. Complete publication of all test reports. Prepare production decision packet 3Q FY 2012. Submit Foreign Comparative Testing closeout report.	1.669	-	0.278
Title: Family of Next Generation Surveillance Systems (Special Operations Command) ***Description:*** The primary outputs are more cost effective technical solutions, replacing legacy surveillance systems with smaller, lighter, more robust, and energy efficient systems. Fielding reduction is greater than five years. ***FY 2010 Accomplishments:***	2.740	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Conducted technical testing and prepared test reports for various surveillance systems. Performed operational test/user assessment and published test reports. ***FY 2011 Plans:*** Complete production decision packet and obtain fielding and deployment release. Submit Foreign Comparative Testing closeout report 2Q FY 2011.			
Title: Fire Control System for Special Operation Forces (SOF) Combat Assault Rifle (SCAR) Grenade Launcher (Special Operations Command) ***Description:*** Validation testing of a fire control system that will extend the effective range of the MK13 Enhanced Grenade Launcher Module from 200 to 600 meters in an effort to counter rocket propelled grenade threats. The primary output is an integrated fire control and ammunition programming system needed to fire a medium velocity (extended range) 40mm programmable grenade from the MK13. Fielding reduction is greater than five years. ***FY 2010 Accomplishments:*** Identified engineering change requirements for medium velocity ammunition being tested and received final test configuration test articles. Doppler Radar testing of test ammunition produced additional change requirements. ***FY 2011 Plans:*** Receive and test approved configuration test rounds. Perform Government Testing and User Demonstration. Submit production decision packet and initiate staff action to obtain fielding and deployment release. Submit Foreign Comparative Testing closeout report 3Q FY 2011.	0.567	-	-
Title: Fuel Leak Detection System for Aircraft (Air Force) ***Description:*** Test two systems that have the potential to improve leak detection during depot maintenance thus reducing unexpected labor costs and improve aircraft quality and delivery to the warfighter. Current methods used to detect fuel leaks in full aircraft and off airframe components are slow, inaccurate, and result in leaks not being detected until an aircraft is refueled prior to the initial check flight. Leaks detected at this time add unexpected labor (over 4000 hours for the F-16 April 2008 to 2009) from additional defuel and purge, aircraft towing, airframe component removal and disassembly, along with potential increases (as an example for the F-16) of 30 to 45 day aircraft flow days. The primary output is a safe tracer gas leak detection system for F-16, A-10, and C-130 full aircraft and off air frame components. If successful, the system(s) can potentially be used at depot, field level, and DoD wide for multiple weapon systems. ***FY 2010 Accomplishments:***	0.223	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Purchase request submitted 4Q FY 2010. ***FY 2011 Plans:*** Test article delivery scheduled for 1Q FY 2011 with test article technical and safety testing scheduled for 1Q FY 2011. Qualification testing scheduled for 2Q FY 2011. Finalize technical test report and procurement decision are scheduled for 3Q FY 2011.			
Title: H-53 Low Cost and Reliable Generator Control Unit (Navy) ***Description:*** Test a lower cost/higher reliability Generator Control Unit (GCU) to remedy the shortfalls of the current system used on the H-53 platform. The program will evaluate a state-of-the-art GCU currently used on foreign aircraft that provides greater reliability. The primary outputs are unit cost of $5 to $6 thousand and reliability of 16 thousand Mean Time Between Failure (MTBF) hours. ***FY 2010 Accomplishments:*** Test article contract awarded during 2Q FY 2010. Test item technical data delivered during 3Q FY 2010. Completed Preliminary Design Review and Critical Design Review (PDR/CDR) successfully. ***FY 2011 Plans:*** Test article delivery scheduled for 2Q FY 2011. Test article technical and safety testing is scheduled for 2Q FY 2011. Qualification testing scheduled for 2Q to 3Q FY 2011. Finalize technical test report and procurement decision are scheduled for 4Q FY 2011.	0.168	-	-
Title: Hostile Fire Indications Modeling and Simulation (HFI M&S) (Navy) ***Description:*** Test a non-developmental HFI M&S System currently in use with the United Kingdom to mitigate the increasing threat of hostile fire from Unguided Munitions (UM). UM includes small arms, tracer rounds, Anti-Aircraft Artillery (AAA) and Rocket Propelled Grenades (RPGs)/unguided rockets. An integrated HFI M&S System will provide the Navy with a more realistic training experience through mimicking the capability of operational HFI Systems fielded in theater. ***FY 2010 Accomplishments:*** Initiated project planning 1Q FY 2010. Performed initial Hardware (HW)/Software (SW) evaluation at vendor Outside Continental United States (OCONUS) site and conducted HW/SW portability assessment 2Q FY 2010. Awarded contract in 4Q FY 2010. ***FY 2011 Plans:***	0.657	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
HW/SW performance testing planned for 2Q FY 2011. Planned integration assessment 3Q FY 2011. Final report/briefing scheduled for end of 3Q FY 2011.			
Title: Inner Diameter High Velocity Oxygenated Fuel (HVOF ID) capability to eliminate chrome on aerospace components (Air Force) - Contingent upon congressional appropriation or congressional notification ***Description:*** Test and qualify a new technology, which uses a HVOF spray gun to apply coatings to the inner diameter of components ten inches or less. The primary outputs are better efficiencies than current thermal spray gun technology and eliminating electrolytic hard chrome (EHC) plating thus, reducing the need for EPA permitting. HVOF ID Gun would increase component durability and increase warfighter weapon system availability. ***FY 2011 Plans:*** Award contract for test article, initiate test planning. ***FY 2012 Plans:*** Receive Test article, initiate technical and integration testing, complete technical and integration testing and initiate field user evaluation in 3Q FY 2012. Finalize technical test report and production decision in 4Q FY 2012.	-	0.614	-
Title: Joint Strike Fighter (JSF) Exhaust Heat Resistant Flight Deck Lighting Fixtures (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test heat resistant shipboard in-deck lighting fixtures. The JSF exhaust is currently expected to destroy the legacy in-deck lighting fixtures aboard Amphibious Assault Ships (AAS). This program will evaluate state-of-the-art lighting fixtures designed to withstand heat. The primary outputs of this effort are heat resistant shipboard deck lighting fixtures for the US Navy. ***FY 2011 Plans:*** Test article contract award 2Q FY 2011. Acquire existing fixture test data 2Q FY 2011. Acquire test item technical data 2Q FY 2011. Evaluate and compare heat resistant fixture performance and compatibility with US Navy shipboard requirements 3Q to 4Q FY 2011. ***FY 2012 Plans:*** Test article delivery scheduled for 1Q FY 2012. Technical and functional lab testing is scheduled for 1Q FY 2012. Environmental and field user testing scheduled for 3Q FY 2012. Final test report and procurement decision are scheduled for 4Q FY 2012	-	0.399	0.439
Title: Landing Craft Air Cushion (LCAC) Operator Suspension Seats (Navy) - Contingent upon congressional appropriation and/or congressional notification	-	1.200	0.299

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Test and field a commercial off-the-shelf marine suspension seat for Landing Craft Air Cushion (LCAC) operators. The purpose of this effort is to lower the risk of lumbar spine injury and long-term disability. This effort will also improve war fighter mission readiness and operator availability on the LCAC in a similar manner as was successfully demonstrated and integrated with the MK-V Special Operations Craft (SOC) program. The marine suspension seat provides operators a safe buffer from the vibrations of the LCAC operational environment. The primary outputs of this project are increased safe operator mission time with respect to human integration standards and a seat model for LCAC 100, the next generation LCAC. ***FY 2011 Plans:*** Test Planning and initial test article procurement 2Q FY 2011. Form and fit verification 3Q FY 2011. Perform at-sea test article function test during 3Q FY 2011. Technical evaluation 4Q FY 2011. ***FY 2012 Plans:*** Field User Evaluation on training craft in 1Q to 2Q FY 2012. Finalize technical test report and provide production recommendation 2Q FY 2012.			
Title: Light Anti-Tank Weapon Rocket Motor Insensitive Munitions (LAW RM IM) Improvement (Navy) ***Description:*** Test a fully Insensitive Munitions (IM) compliant Light Anti-Tank Weapon (LAW) system to increase overall safety and reduce the severe logistical burden associated with storage and transportation of non-IM compliant munitions. The primary outputs are improved safety for system operator/handler; reduced severity of reaction to IM environments; minimized collateral damage caused by accidental rocket motor initiation; and significantly reduce the logistic burden of transporting non-IM compliant munitions. ***FY 2010 Accomplishments:*** Received test articles at the beginning of 1Q FY 2010. Completed Insensitive Munitions (IM) testing and Critical Design Review (CDR) of the container system during 2Q FY 2010. Initiated Weapon System Explosives Safety Review Board (WSESRB) Certification process during 2Q FY 2010. Qualification testing of the container initiated during 3Q FY 2010. Completed qualification testing of the container 4Q FY 2010. ***FY 2011 Plans:*** Propulsion system contract award early 1Q FY 2011. Receive propulsion system test articles by end 2Q FY 2011. Initiate IM and CDR beginning 3Q FY 2011 and complete by end 3Q FY 2011. Initiate qualification testing beginning 3Q FY 2011. ***FY 2012 Plans:***	1.016	0.368	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete the Weapon System Explosives Safety Review Board Certification process, procurement decision, final technical report 3Q FY 2012.			
Title: M1A1 Crew Cooling System (Navy) ***Description:*** Test an adequate cooling solution for the entire M1A1 tank crew. The primary outputs are to significantly increase the overall safety of M1A1 crewmembers, resulting in improved mission endurance and operational effectiveness and greatly reduce the logistical burden associated with rotating tank crews due to rapid dehydration. ***FY 2010 Accomplishments:*** Received test articles at the end of 1Q FY 2010. Initiated lab/integration and M1A1 tank operational testing during 2Q FY 2010. Completed lab/integration and M1A1 tank operational testing during 3Q FY 2010. Finalized technical test report and procurement decision at the end of 4Q FY 2010.	0.480	-	-
Title: Marine Grade Aluminum Plate (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Evaluates an engineered aluminum plate with superior corrosion resistance for use as a repair and replacement material for a ship's superstructure. The Navy has extensive experience with aluminum superstructures on the FFG-7 and CG-47 class ships. A particular concern is an aluminum alloy's susceptibility to sensitization - a microstructural phenomenon that increases corrosion susceptibility, and provides an environment for stress corrosion cracking. The primary output of this project is superior aluminum with multi-layered material that is corrosion resistant in a marine environment. Compared to conventional alloys, this will provide increased survivability, sustainability, and operational readiness compared to current decking and bulkhead plate. ***FY 2011 Plans:*** Procurement of test material in 2Q FY 2011. Long term exposure corrosion testing in 2Q FY 2011. Fabricate test samples 2Q to 3Q FY 2011. Mechanical property testing in 3Q FY 2011. Fatigue and fracture toughness testing during 3Q FY 2011. Aging and aluminum sensitization testing in 3Q FY 2011. Conduct evaluation of weldability during 4Q FY 2011. Adhesion and wear tests in 4Q FY 2011. Evaluate physical properties in 4Q FY 2011. ***FY 2012 Plans:*** Conduct mechanical property testing of welded specimens during 1Q FY 2012. Evaluate effects of paint removal and non-skid removal throughout 1Q to 2Q FY 2012. Continue aging and aluminum sensitization testing between 1Q to 2Q FY 2012. Complete mechanical property, fracture, and fatigue testing in 2Q FY 2012. Continue data acquisition from long term exposure	-	0.331	0.311

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
corrosion testing in 3Q FY 2012. Prepare technical test report and closeout report and make a procurement decision in 4Q FY 2012.			
Title: Maritime EOD Training, Ranging and Evaluation System (METRES) (Navy) ***Description:*** Test an Explosive Ordinance Disposal (EOD)/Mine-Counter-Measures (MCM) Training, Ranging and Evaluation System. The system is capable of detecting and measuring energy signature levels of in-service and future Maritime EOD MCM equipment. It is capable of measuring signatures arising from magnetic, acoustic, seismic, and artificial light activity. Permits EOD/MCM forces to train in a near-real world threat environment. The primary outputs are a programmable influence mine simulation system operated from small craft that is portable and which may be deployed, operated, and recovered from the water without aid of mechanical lifting devices; and a system which will be programmable to support training against new mine threats by allowing new algorithms and threat characteristics to be readily input into the system. ***FY 2010 Accomplishments:*** Issued Request for Proposal 1Q FY 2010. Completed master test plan 4Q FY 2010. Completed post award requirements review 4Q FY 2010. Completed tasking order for fleet evaluation 4Q FY 2010. ***FY 2011 Plans:*** Accept test articles and begin test and evaluation 1Q FY 2011. Complete logistics assessment/supportability review 2Q FY 2011. Procurement decision 3Q FY 2011. ***FY 2012 Plans:*** Exercise production option (second buy of systems to meet Full Operational Capability) 1Q FY 2012.	0.693	-	-
Title: Micro-Smooth Coating System (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Evaluate commercial micro-smooth coating system as additional protective layers in conjunction with standard topcoats. Micro-smooth coating systems that reduce parasite drag offer the potential to decrease fuel consumption, improve flight characteristics, and extend coating life. A-glaze, a reactive polymer, will be evaluated and results will be compared to commercial products being tested in leverage funding. ***FY 2011 Plans:*** Test article delivery scheduled for 2Q FY 2011. Materials performance lab testing scheduled to begin beginning of 3Q FY 2011. Wind tunnel testing estimated to begin 4Q FY 2011. ***FY 2012 Plans:***	-	0.399	0.439

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Complete materials performance tests 2Q FY 2012. Perform environmental and other surface tests 2Q FY 2012. Finalized technical test report and procurement decision 3Q FY 2010.			
Title: MiniMUTES Hard Disc Drive Upgrade (Air Force) ***Description:*** Tests a replacement Modified Frequency Modulation Bus Hard Disk Drive (HDD), manufactured in France called Datex, for the Mini Multiple Threat Emitter Systems (MiniMUTES) main computer. Replacement of the 20 year old HDD will allow continued pilot threat training using simulated threats such as surface-to-air missiles and anti-aircraft artillery radars. The existing MiniMUTES HDD is obsolete and is no longer repairable or procurable. The primary output is a replacement of the HDD with an up-to-date product. ***FY 2010 Accomplishments:*** Contracted for test article and conduct test planning and training. Initial testing unsatisfactory, project cancelled.	0.003	-	-
Title: Multi-Diver Heating & Cooling System for Wet Submersibles (Special Operations Command) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** This project will validate an existing underwater diver heating and cooling system (DHCS) for Special Operations Forces (SOF) use that maintains a combat diver's core body temperature, regardless of water temperature. The DHCS is based on a miniature vapor compression cycle heat pump that exchanges fluid through high density liquid circulating garments worn by SOF conducting maritime missions. The primary output is a mission enhancing survival system that will be an integral part of the future Shallow Water Combat Submersible for Navy SEALs. Fielding reduction is greater than five years. ***FY 2011 Plans:*** Execute contract for test articles and receive delivery of same. Analyze vendor data and complete test planning. Conduct developmental/technical testing. ***FY 2012 Plans:*** Conduct operational testing and user assessment. Publish all test reports. Submit Foreign Comparative Testing closeout report 4Q FY 2012.	-	0.896	1.041
Title: Multi-fuel Submersible Outboard Engines (Special Operations Command) ***Description:*** Validation testing of a patented Italian air-assisted, direct-injection, fuel delivery system integrated into commercial off-the-shelf, lightweight, submersible outboard engine; to produce non-gasoline burning outboard engine capable of using multiple fuels. The primary output is Compliance with Department of Defense (DoD) Directive 4140.25 Management Policy for	0.530	0.194	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Energy Commodities and Related Services which mandates the conversion of combat systems to common, less combustible fuels by 2010. Fielding reduction is greater than eight years. ***FY 2010 Accomplishments:*** Obtained prototype subsystems and conducted Phase One prototype testing. Completed functional testing on Combat Rubber Raiding Craft (CRRC). Identified initial engine modifications and conducted Phase Two engineering tests on modified engine. ***FY 2011 Plans:*** Initiate Phase Three, which consists of final configuration modification and technical testing on CRRC. Phase IV will be conducted and consists of final developmental and operational testing, followed by production decision 4Q FY 2011.			
Title: Network Application System (Special Operations Command) ***Description:*** This project will be in support of improving network application system's security. Project is classified. Project will be completed by 4Q FY 2011. ***FY 2010 Accomplishments:*** Classified Project - Details are not releasable.	1.675	-	-
Title: Nitrocellulose for Combustible Case Cartridges (Army) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** The objective of this program is to qualify the hammer-mill process for the sheeted nitrocellulose production process at the Radford Army Ammunition Plant to use domestic sheeted cotton linters. ***FY 2011 Plans:*** Upon receipt of FY 2011 funds, the contract will be awarded. Project Manager will receive foreign nitrocellulose and then produce the Combustible Case Cartridges and then perform material question and answers. Ballistic testing at Yuma Proving Ground will begin in 4Q FY 2011. ***FY 2012 Plans:*** Ballistic Testing at Yuma Proving Ground in 2Q FY 2012. Once analysis is completed, a test report/recommendation and technical vvaluation will be produced by 4Q FY 2012.	-	0.749	0.608
Title: Novel Processing System for Ration Meat Items (Army) ***Description:*** Test the Osmofood® system, a simple one-step process which uses inexpensive ground meat to produce shelf stable meat items with desirable texture. The system does not use extremely high temperature like a retort process; hence	0.581	1.166	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
the quality and nutrients are well preserved. Furthermore, the system can be used to incorporate supplemental nutrients (e.g. curcumin, green tea extract) and quality enhancers (e.g. canola protein for meat succulence) to produce a meat roll-up that can be consumed as a savory snack or used as a filling for a shelf stable sandwich. This system could be used for numerous new rations items that up to now not possible. ***FY 2010 Accomplishments:*** Following the production of test items, conducted technical testing at ADIV Clermont-Ferrand, France in 3Q FY 2010. Conducted Microbiological Validation, Accelerated Storage, and Sensory Evaluation at ADIV and NSRDEC in 3Q to 4Q FY 2010. ***FY 2011 Plans:*** Downselect items that meet military ration shelf life requirements, are microbiologically safe, and meet the tastes and preferences of U.S. warfighters. Procure Osmofood pilot line unit and conduct confirmatory testing of selected items. Ship pilot line Osmofood unit to US location in Augusta, GA for US domestic production feasibility testing.			
Title: Photonics Mast Tech Insertion on the Virginia Class Submarine (Navy) ***Description:*** Test an alternative Photonics Mast for the Virginia Class and Ohio Class submarines. The purpose of this effort is to correct a reliability shortfall with the current system that is impacting operational availability. Photonics Mast System provides the imaging, navigation, electronic warfare, and communications function for critical safety of ship and tactical intelligence applications. The current system has significant reliability and maintainability issues. The primary outputs are modular construction of the FCT Photonics Mast that will allow rapid maintenance actions and replacement of functional elements of the sensor at the Intermediate Maintenance Activity vice having to return the sensor to the factory for service; the FCT technology will be upgradeable (Technology Insertion/Refresh): Implementation of high definition color cameras will provide a much improved imagery to the operator and the new system will be more reliable when compared to the legacy Kollmorgen photonics mast. ***FY 2010 Accomplishments:*** Attained approval for shipboard installation and integrations of test article during 2Q FY 2010. Installed and integrated test article during 2Q FY 2010. Perform pier-side systems test and integration, scheduled for 4Q FY 2010. ***FY 2011 Plans:*** Performed at-sea testing for systems evaluation and performance 1Q FY 2011. Finalize technical test report and production decision at the end of 4Q FY 2011.	0.015	-	-
Title: Pilar Gunfire Detection System Upgrades (Special Operations Command) ***Description:*** This project will validate crucial upgrades to fixed site and vehicle mounted gunfire detection systems (GDS). This will provide Special Operations Forces advanced technology to effectively locate and defeat sniper or hostile small arms fire. The	0.648	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
primary outputs are necessary GDS upgrades that include Thermal Image detection, Gun Barrel Navigation integration and Global Positioning System pinpointing. Fielding reduction is greater than three years. ***FY 2010 Accomplishments:*** Conducted engineering evaluation and initial performance testing to identify required engineering change orders. Obtained test articles and completed user assessment at original equipment manufacturer test facility. Conducted user familiarization demonstration. ***FY 2011 Plans:*** Publish test reports. Prepare Foreign Comparative Testing closeout report.			
Title: Precision Sniper Rifle (Foreign and Domestic) (Special Operations Command) ***Description:*** Tests various sniper rifle systems that are more lethal and capable of accurately engaging enemy personnel out to ranges of 1,500 meters. This will provide Special Operations Forces (SOF) Snipers the ability to create more stand-off distance during engagements, which will increase their survivability. This new range will also allow for peak-to-peak engagements on the mountain tops of Afghanistan in the prosecution of Overseas Contingency Operations. The primary output is a complete sniper system with: weapon, noise and flash suppression, ammunition and support articles. This project will capitalize on the availability of recently developed sniper systems that "out-perform" currently fielded SOF sniper systems, and integrate them into the Family of SOF Sniper Rifles Program. Fielding reduction is greater than six years. ***FY 2010 Accomplishments:*** Issued performance specification/request for proposal and received product sample weapons and ammunition. Performed initial go/no go testing of product samples and conducted review of test results and vendor proposals to complete Joint source selection. None of the vendors were able to meet all the necessary criteria for Source Selection; so no selection occurred. Each vendor was given instructions on what is expected and will resubmit their proposals for reconsideration. ***FY 2011 Plans:*** New solicitation will be published in 2Q FY 2011, with contract award expected 4Q FY 2011. Receive test article weapons and ammunition. Perform developmental testing. ***FY 2012 Plans:*** Achieve safety release prior to conducting user assessment testing. Revise Capabilities Production Document and obtain production decision 2Q FY 2012.	1.402	0.769	-
Title: Programmable High Explosive Dual Purpose Ammunition (Special Operations Command)	0.908	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Validation testing of 40 mm high-velocity Programmable-High Explosive Dual Purpose (P-HEDP) rounds for the Advance Lightweight Grenade Launcher (ALGL) MK47 Weapon System. The primary output is P-HEDP ammunition for Special Operations Forces (SOF) use. Fielding reduction is greater than five years. ***FY 2010 Accomplishments:*** Awarded P-HEDP Indefinite Delivery Indefinite Quantity contract. Initiated test article production. Conducted engineering review of vendor test data. Began Weapon System Explosive Safety Review Board and Joint Safety Board review Processes. ***FY 2011 Plans:*** Complete test article manufacturing and take delivery of developmental test articles. Receive operational test articles and conduct operational testing. Obtain safety release and Joint Safety Board approvals. Complete Milestone C Decision package and prepare Foreign Comparative Testing closeout report.			
Title: Pyrolysis Solid Waste Disposal With Energy Recovery (Army) ***Description:*** Test and evaluate a containerized system that uses Pyrolysis Technology to dispose of approximately two tons of solid waste per day within a Force Provider Base Camp. This technology will help reduce or eliminate the need for outside contractors to access the base camp to dispose of solid waste thereby reducing potential threats to the force. Primary outputs: system will be self-powered reducing the need for additional fuel and the energy recovery of the Pyrolysis will reduce the amount of fuel needed to support the base camp, thereby reducing logistics burden. ***FY 2010 Accomplishments:*** Conducted factory acceptance testing prior to delivery to the Government. Conduct operational testing of the system in 1Q FY 2010. Conduct contractor provided system training to the government team at Fort Irwin in 4Q FY 2010. ***FY 2011 Plans:*** Complete final integration of the PWDS Test Unit. Complete development and operation testing and procurement decision documentation by 4Q FY 2011. Procure three systems in FY 2012.	0.893	0.491	-
Title: Rapid Deployment and Extended Autonomy for Single and Multiple UUVs (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test an autonomous mission planning plug-in module for the Common Operator Interface for Naval EOD (COIN). The module provides for pre-mission planning and post-mission analysis of missions featuring autonomous behaviors which interfaces directly with COIN. It also will reside on the payload computer on the UUV to provide in-mission dynamic re-planning based on through-sensor environmental feedback and Automated Target Recognition (ATR) capability. This effort is aimed at	-	0.982	1.081

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
enhancing the capability of fleet assets by permitting a shift from pre-scripted vehicle paths to the use of autonomy to define and attain higher-level mission objectives more efficiently. ***FY 2011 Plans:*** Award delivery order for autonomous mission planning plug-in module in 2Q FY 2011. Perform integration, analysis, and study of prototype module seats during 4Q FY 2011. Combine demonstration results with simulation results to verify the fidelity of the simulation to demonstrate the essential aspects of the autonomy and to show system robustness to many situations during 4Q FY 2011. ***FY 2012 Plans:*** Finalize autonomous mission planning module and associated documentation during 1Q FY 2012. Integrate autonomous mission planning module onto EOD prototype vehicles with internal payload computers in 2Q FY 2012. Perform user evaluations in 3Q FY 2012. Publish test reports in 4Q FY 2012. Perform final module review in 4Q FY 2012. Publish decision packet with procurement recommendations and closeout report during 4Q FY 2012.			
Title: RapidEye Imagery for Eagle Vision (Air Force) ***Description:*** Test software for integration of RapidEye into EagleVision. RapidEye is a constellation of five Earth remote-sensing satellites intended for broad-area multispectral optical imaging, with the capability to image areas of interest multiple times per day. The five-satellite constellation redundancy enhances its availability and survivability and eliminates single-point-of-failure risk unique to single spacecraft. The primary output is the integration of the RapidEye satellite constellation ground station interface into one of five Eagle Vision Data Acquisition Segment (DAS) sites; and following a successful FCT evaluation of this initial integration, the program would subsequently integrate the same ground station interface into the four remaining Eagle Vision sites. ***FY 2010 Accomplishments:*** Contracted for the test article. ***FY 2011 Plans:*** Initiate technical and safety testing efforts 1Q FY 2011. Initiate field user evaluation and complete technical and safety testing 2Q FY 2011. Receive Test article 3Q FY 2011. Finalize technical report by end of 3Q FY 2011. Finalize production decision early 4Q FY 2011.	2.300	-	-
Title: Reconnaissance Airborne Pod TORnado (RAPTOR) Precision Targeting (PT) (Navy) - Contingent upon congressional appropriation and/or congressional notification	-	1.498	1.379

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Provide the Distributed Common Ground System – Navy (DCGS-N) and Marine Corps (DCGS-MC) with a capability to receive in near real-time, via Common Data Link (CDL) antenna systems, Intelligence, Surveillance, and Reconnaissance (ISR) data from the Reconnaissance Airborne Pod for Tornado (RAPTOR) Systems that are carried by Royal Air Force (RAF) GR-4 platforms. The primary outputs of the RAPTOR System are Electro-Optical (EO) and Infrared (IR) images in a digital format. Software modifications to the ISR Processing, Exploitation, and Dissemination (PED) Systems currently used by DCGS-N will be implemented and tested to verify that ISR data from RAPTOR Systems can be rapidly received, screened for potential mission application, and exploited to produce targeting data that can be used by US weapon systems. This capability will allow US forces to leverage coalition ISR assets and reduce mission requirements for US ISR platforms. ***FY 2011 Plans:*** Award contracts to vendors 2Q FY 2011. Investigate ASTOR processing and exploitation capabilities and begin software transfer and development on US DCGS components 3Q FY 2011. Coordinate plans for flight testing and evaluation through 1Q FY 2012. ***FY 2012 Plans:*** Coordinate plans for flight testing and evaluation 1Q FY 2012. Validation analysis 3Q FY 2012.			
Title: Rifle Accessory Control Unit (RACU) (Navy) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Tests the RACU, a one-handed, on the move, intuitive, programmable device that will enable a Marine to operate all rifle accessories and communications equipment through a central control point. Its five-button, silent, shock/vibration resistant, and water proof digital controller that attaches to the front of any rifle via a MIL-STD 1913 or STANAG 4694 NATO Accessory Rial. A computer program also helps guide a first time operator with simple symbology, triggering muscle memory and promoting eyes-free operation. RACU is capable of intelligently controlling all the sensors optics, flashlights, and radios while simultaneously allowing for changes in thermal views, two-way communications, and turning power on and off to individual devices when not in use. ***FY 2011 Plans:*** Contract preparation/award and test planning estimated by the end of 2Q FY 2011. Complete fabrication of test articles during 3Q FY 2011. Receive test articles and initiate performance, environmental/shock testing during 4Q FY 2011. ***FY 2012 Plans:*** Complete performance and environmental/shock testing and initiate field user evaluation during 1Q FY 2012. Complete field user evaluation by end of 2Q FY 2012. Finalize technical report and procurement decision during 3Q FY 2012.	-	0.736	-
Title: Robotic – Moving Target System (R-MTS) (Navy)	2.233	0.614	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Description: Test a free roaming, pre-programmable mobile target system that simulates realistic human movements and responses in an urban combat environment. The primary outputs are improved marksmanship skills, tactical decision making proficiency, and analytical abilities that will result in the combat efficacy of engaging moving life-like targets with live-fire and maneuver. ***FY 2010 Accomplishments:*** Test article contract awarded and initiated fabrication of test articles at the end of 3Q FY 2010. Received test articles at the end of 4Q FY 2010. ***FY 2011 Plans:*** Complete test planning and initiate technical and safety testing efforts 1Q FY 2011. Initiate field user evaluation and complete technical and safety testing 2Q FY 2010. Finalize technical report by end of 3Q FY 2010. Finalize production decision early 4Q FY 2011.			
Title: Signaling Colored Smoke Grenades (SCSG) (Navy) ***Description:*** Test a family of signaling colored smoke grenades for procurement and immediate fielding to the Warfighter. SCSG is a joint-project with the Army, and the United States Marine Corps is the lead. The primary outputs are readily producible and cost efficient Green/Yellow/Red/Violet/White colored smoke grenades to meet operational requirements for ground-to-air and ground-to-ground signaling and improvements for increased smoke duration, safer initiation system by reducing flame height, decreased smoke toxicity, more environmentally friendly components, reduced weight, Insensitive Munitions compliance, and denser smoke to enhance visual recognition from long distances. ***FY 2010 Accomplishments:*** Completed Phase I down-selection at the end of 3Q FY 2010. Completed Phase II contract award during 4Q FY 2010. ***FY 2011 Plans:*** Receive Phase II test articles by the end of 1Q FY 2011. Complete insensitive munitions / technical / safety / environmental / toxic testing during 3Q FY 2011. Initiate Weapon System Explosives Safety Review Board/Naval Ordnance Safety and Security Activity Certification process by the end of 1Q FY 2011 and anticipate completion during 4Q FY 2011. Finalize technical test report and production decision by the end of 4Q FY 2011.	0.783	-	-
Title: SOF Close Target Reconnaissance Systems (Special Operations Command) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** This project will test and evaluate several evolutionary systems that capture and transfer near-real-time actionable intelligence information with instant data exfiltration, to monitor potential foreign hostile threat activities. The primary output is to	-	2.111	-

Exhibit R-2A, RDT&E Project Justification: PB 2012 Office of Secretary Of Defense		DATE: February 2011
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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
covertly employ close-target audio, video and optical reconnaissance systems for Special Operations Forces (SOF) use. Fielding reduction is greater than five years. ***FY 2011 Plans:*** Execute contract for test articles and receive delivery of same. Analyze vendor data and complete test planning. Conduct technical and safety testing, and perform operator/user assessment testing. ***FY 2012 Plans:*** Publish all test reports. Prepare production decision packet and obtain milestone decision. Submit Foreign Comparative Testing closeout report 1Q FY 2012.			
Title: Stand Off Gas Cloud Detector for Chemical Weapons (Special Operations Command) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Test a remote stand-off gas detector that uses a thermal camera to conduct a spectral analysis in order to detect identify, classify, and visualize chemical hazards, such as Chemical Warfare Agents and Toxic Industrial Chemicals. The primary output is a Stand Off Chemical Gas Cloud Detector for use by Special Mission Units. Fielding reduction is greater than five years. ***FY 2011 Plans:*** Execute contract for test articles and receive delivery of same. Analyze vendor data and complete test planning. Obtain safety release and conduct initial technical testing. ***FY 2012 Plans:*** Conduct combined developmental and operational testing. Publish all test reports. Prepare production decision packet and obtain milestone decision. Submit Foreign Comparative Testing closeout report 3Q FY 2012.	-	1.250	0.702
Title: Sub Caliber Training System for MAAWS (Special Operations Command) ***Description:*** Comparative evaluation of sub-caliber training systems for the Carl Gustaf 84mm weapon system. The primary outputs are sub-caliber training rounds inserted into an 84mm ammunition adapter that will provide realistic, cost efficient weapons training, saving expensive 84mm ammunition for mission application. ***FY 2010 Accomplishments:*** Conducted source selection. Re-competition to allow for non caliber specific training systems consideration delayed project 9 months. Awarded test article contract. Continued test planning. Initiated test article hardware production and integration. ***FY 2011 Plans:***	1.459	0.851	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Accept delivery of training system test articles. Obtain safety release and type classify for limited production units. Conduct government testing to include first article testing, combined developmental and operational testing. ***FY 2012 Plans:*** Conduct limited user testing in 1Q FY 2012. Publish all test reports. Complete Joint Service Weapons Safety Review process. Obtain production decision and fielding and deployment release in 2Q FY 2012. Submit Foreign Comparative Testing closeout report 1Q FY 2013.			
Title: Submarine Survivor Locating Device (Navy) ***Description:*** Test an automatic location device utilizing Very High Frequency (VHF) radio technology integrated with the Global Positioning Satellite System. It will enable Navy rescue operations to home directly on submarine escape survivors in the open ocean. The primary output is successful location of distressed submariners on the ocean's surface vice the current technology which only identifies the coordinates of the distressed submarine. ***FY 2010 Accomplishments:*** Contracted for test articles 3Q FY 2010. Received ten V200 test articles from MobilArm Limited. Delivered five V200 test articles to Naval Service Warfare Center (NSWC) Panama City for pressure-proof and off-gas testing 4Q FY 2010. Completed initial submarine qualification testing and received approval for use onboard all in-service submarines. Validated vendor provided battery service life and material composition data initiated. At sea testing in conjunction with USCG off coast of Tampa Bay, FL 4Q FY 2010. ***FY 2011 Plans:*** At-sea signal acquisition testing scheduled for 2Q FY 2011. Conduct additional signal acquisition testing in more severe sea state conditions. Perform final operator assessments and testing 3Q FY 2011. Conduct quality audits and make procurement decision 4Q FY 2011.	0.437	0.562	-
Title: Sustainable Water Extraction System (Special Operations Command) - Contingent upon congressional appropriation and/or congressional notification ***Description:*** Qualifies a sustainable water extraction system for Special Forces civil affairs units to provide potable water in remote and austere environments. A system that combines the power of sun and wind for unattended operation, manufactured by Grundos in Denmark will be tested in United States Southern Command (USSOUTHCOM) and United States Central Command (CENTCOM) area of operations. ***FY 2011 Plans:***	-	0.614	0.676

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
After receiving the initial FY 2011 funds, the contract will be awarded. The PM will then deliver test articles to SOUTHCOM for operational initial phase one testing. ***FY 2012 Plans:*** If phase one testing successful, additional test articles will be sent to CENTCOM test village for operational testing. Complete test report and close out reports with recommendations on procurement.			
Title: Ultra High Energy Rechargeable Battery (Army) ***Description:*** Test a new rechargeable BB-2590/U battery. It consists of lithium-ion cells and replaces a battery used in many US Army portable radios and electronics equipment and is the most widely used battery in the Army inventory. Compared to the current production battery, the new BB-2590/U battery will have one hour (30 percent) greater service time, 1.6 Ah (24 percent) greater capacity, and 38 Watt-hours (20 percent) greater energy. At -32 °C and five amperes, the new battery will provide 1.3 hours service time and 165 Watt-hours energy; whereas, the current production battery will not operate at -32 °C. The battery weight will be reduced by 71 grams per battery. Less weight, greater run time, equals fewer batteries required for missions. ***FY 2010 Accomplishments:*** Awarded the purchase contracts for test article cells and batteries. Tested batteries passed the altitude environmental test and the thermal shock environmental test during 4Q FY 2010. ***FY 2011 Plans:*** Evaluations will continue through FY 2011. Upon completion of successful testing, Defense Logistics Agency will incorporate the new BB-2590/U battery as a replacement for the currently used BB-2590/U battery. Acquisition 1Q FY 2012.	0.592	0.487	-
Title: Unmanned Systems Communications Interoperability (USCI) (Navy) ***Description:*** Test a system for allowing independently developed unmanned vehicles and control systems to exchange information in a multi-domain, multi-vendor environment. This project will test a universal data translator to substantially reduce the time, cost and risk to integrate, test, and evaluate multi-system combinations using both new and existing equipment from any vendor. The primary output is system integration using a product rather than a service, allowing more systems to share information and command and control in an interoperable environment. ***FY 2010 Accomplishments:*** Outlined project plan and defined test scenarios during 2Q FY 2010. Completed initial integration and test plan development during 3Q FY 2010. ***FY 2011 Plans:***	1.012	-	-

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2010	FY 2011	FY 2012
Conduct test for unmanned ground vehicles 1Q FY 2011. Conduct test for combined unmanned ground and maritime vehicles 1Q to 2Q FY 2011. Performance evaluation and technical test report to be completed by end of 2Q FY 2011.			
Title: United States Marine Corps (USMC) M1A1 Laser Warning System (LWS) (Navy) ***Description:*** Test a real time laser warning system for the M1A1 tank. The primary outputs are detect and characterize laser threats under all weather and battlefield conditions; provide 360 degree azimuth coverage and gives the tank crew the angle of arrival within +/- 1 degree; and increased survivability and save lives. ***FY 2010 Accomplishments:*** Contract awarded during 3Q FY 2010. Completed delivery of test articles at the end of 4Q FY 2010. ***FY 2011 Plans:*** Complete fabrication of test articles during 3Q FY 2011. Receive test articles and initiate technical/integration testing beginning 4Q FY 2011. ***FY 2012 Plans:*** Complete technical/integration testing and initiate field user evaluation at the end of 1Q FY 2012. Complete field user evaluation, final technical report, and procurement decision during 3Q FY 2012.	0.670	0.798	-
Title: FCT FY 2012 Plans ***Description:*** Investment decisions are made during the execution years in response to service/United States Special Operations Command (USSOCOM) and Other Government Organizations' (OGO) requirements and as new threats emerge or new opportunities are presented. In FY 2012, the FCT will invest in service/USSOCOM/OGO projects that will focus in the following operational areas such as: Forward Operating Base Protection; Hostile Fire/Air Crew Protection (small arms fire and man-portable air-defense systems); Cyber Defense; Autonomous and Portable Air, Ground and Underwater Systems; Enhanced Soldier Protection; Improved Power Sources; Improved Logistics and Equipment Reset; and any other focus areas that benefit the warfighter. ***FY 2012 Plans:*** Initiate new start projects and support ongoing projects.	-	-	6.505
Accomplishments/Planned Programs Subtotals	33.155	32.755	19.080

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C. Other Program Funding Summary ($ in Millions)

N/A

D. Acquisition Strategy

N/A

E. Performance Metrics

Since the program's inception in 1980, Office of Secretary of Defense (OSD) has initiated 630 projects; 551 projects have been completed to date. Of the 266 evaluations that met the sponsors' requirements, 218 led to procurements worth approximately $10.400 billion in FY 2010 constant year dollars. With an OSD investment of about $1.170 billion, the FCT program has realized an estimated RDT&E cost avoidance of $7.800 billion in FY 2010 constant year dollars. In FY 2010 FCT had a transition rate of 93 percent for completed projects, exceeding the objective of 30 percent for demonstration programs (Strategic Objective 4-3, Office of the Under Secretary of Defense, Acquisition, Technology & Logistics (OUSD (AT&L)).