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Exhibit R-2, PB 2010 Office of Secretary Of Defense RDT&E Budget Item Justification **DATE:** May 2009

APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
0400 - Research, Development, Test & Evaluation, Defense-Wide/BA 3 - Advanced Technology Development (ATD)					PE 0603826D8Z Quick Reactions Special Projects (QRSP)					
COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	109.493	106.795	107.984						Continuing	Continuing
P826: Quick Reaction Fund	32.413	30.340	29.217						Continuing	Continuing
P828: Rapid Reaction Fund	48.911	49.620	49.406						Continuing	Continuing
P829: Technology Transition Initiative (TTI)	28.169	26.835	29.361						Continuing	Continuing

A. Mission Description and Budget Item Justification

Quick Reaction Special Projects Program supports three separate projects that provide rapid funding to expedite new development and transition of new technologies to the warfighter. The projects that are part of the QRSP are the Quick Reaction Funding (QRF), Technology Transition Initiative (TTI), and the Rapid Reaction Fund (RRF). QRSP provides the flexibility to respond to emergent DoD issues and address technology surprises and needs within the years of execution outside the two-year budget cycle. The TTI program is mandated by Congress and receives high congressional interest.

The Quick Reaction Fund (QRF) program is focused on responding to emergent needs during the execution years that take advantage of technology breakthroughs in rapidly evolving technologies. Examples of the types of projects that are envisioned include: accelerating promising research that will enable transformation; or will fill critical gaps in DoD acquisition programs and will last no longer than 12 months; or maturation of technologies critically needed by combatant commanders for operations. Typically these projects are on the technology maturity scale where an idea or technology opportunity is proven and demonstrated.

Authorized by Title 10 and Section 215 of the FY2003 Defense Authorization Act, the Technology Transition Initiative (TTI) facilitates the rapid transition of new technologies from the DoD science and technology (S&T) base into DoD acquisition programs. The program addresses the funding gaps that exist between the time a mature technology is demonstrated and the time it can be funded and procured for use in an intended weapons system or operational capability for the warfighter.

In FY 2010, RRTO's objectives are to leverage the DoD science and technology base and those of the other Federal Departments; stimulate interagency coordination and cooperation; accelerate the fielding of capabilities and concepts to counter emerging threats; and provide feedback to the S&T community to guide long term developmental strategies. The task force works to anticipate adversaries' exploitation of technology, including available and advanced capabilities. Additionally, the task force works to exploit technology developed outside of DoD in the commercial sector, in academia and international arenas as well as anticipate adversary's application of available and advanced technology. The average length of a RRTO program falls within an 8-12 month range in order to more effectively aid the warfighter.

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B. Program Change Summary (\$ in Millions)

	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Previous President's Budget	113.244	113.924	114.565	
Current BES/President's Budget	109.493	106.795	107.984	
Total Adjustments	-3.751	-7.129	-6.581	
Congressional Program Reductions		-9.339		
Congressional Rescissions		-0.590		
Total Congressional Increases		2.800		
Total Reprogrammings	-0.511			
SBIR/STTR Transfer	-3.013			
Undistributed reduction	-0.227			
Balance attributed to undistributed reductions levied by legislative policies			-5.158	
Other			-1.423	

Congressional Increase Details (\$ in Millions)

Project: P828, Augmented Reality to enhance Special Warfare Domain

Project: P826, Unmanned Aerial Vehicles

	<u>FY 2008</u>	<u>FY 2009</u>
		1.600
		1.200

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COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P826: Quick Reaction Fund	32.413	30.340	29.217						Continuing	Continuing

A. Mission Description and Budget Item Justification

The Quick Reaction Fund (QRF) provides flexibility to respond to emergent warfighter needs in the execution years. It takes advantage of technology breakthroughs in rapidly evolving technologies with expected completion within 6 to 12 months.

Quick Reaction Fund - A data call was released on July 28, 2008 requesting proposals in response to emergent operational needs and to capitalize on technologies. To assist in prioritizing the proposals, the call letter requested the Service and Agency Science and Technology Executives and the DDR&E principles to submit their top ten proposals. A notification on the DDR&E website was also posted so there was another avenue to submit proposals. Candidate proposals were focused in the areas that have the potential to address disruptive, catastrophic and irregular technologies. Each proposal addressed the description of the technology/concept, description of any demonstration testing required, description of technical, funding, and schedule risk, proposed executing Service/Agency and User. The proposals were reviewed for technical and warfighter relevance. Projects awarded with FY 2009 funding include Mini Scanning Mirror Fabrication and Test, Rover Compatible SmartCapture Video for Close Air Support, Vigilant Sentinel - An EO/NIR based Missile Warning System, AOA Probe Torque Tester, MAV System for Enhanced Support of Cave Detection, Attack Planning, BDA, and Mission Planning, et.al. Below is more in-depth discussion of the projects funded. Because these programs are one time efforts, there are currently no plans to fund them in other years. However, for the overall QRF program, FY 2010 and 2011 plans are to continue to respond to critical operational needs and technology opportunities.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2008	FY 2009	FY 2010	FY 2011
436L Cargo Net Redesign initiative	0.305	0.000	0.000	
It is desired to replace the existing three piece net with a single piece net to improve efficiency in cargo pallet build up time and personnel requirements.				
<i>FY 2008 Accomplishments:</i>				
A single piece net was certified to meet air lift needs in place of the existing three piece net. The one piece net creates efficiencies by reducing overall pallet build up time and personnel requirements (one person vs. current two person minimum). Introduction of a competitive product reduces acquisition program risk by avoiding the sole source situation.				

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B. Accomplishments/Planned Program (\$ in Millions)			FY 2008	FY 2009	FY 2010	FY 2011
<p>Agile Robotics for Logistics</p> <p>The project objective is to create an agile robotic platform that can locate, grasp, lift, and manipulate cargo objects (pallets, boxes, etc.) under command of one or more human operators.</p> <p><i>FY 2008 Accomplishments:</i> An increasingly capable agile mobile manipulation platform was developed that can locate, grasp, lift, carry, manipulate, place, and release objects of interest potentially including pallets, boxes, and individual items or objects, all under text command of one or more humans.</p>			2.500	0.000	0.000	
<p>Automated Imagery Ship Detection for Open Ocean and Littorals</p> <p>This project aims to develop an image analysis tool to automatically detect ships in overhead satellite imagery.</p> <p><i>FY 2008 Accomplishments:</i> An image analyst tool to automatically detect ships in overhead satellite imagery was developed.</p>			0.640	0.000	0.000	
<p>Counter Sniper Protection System Turret</p> <p>The objective of this project is to develop a turret-based system to provide sniper protection and counter engagement capability.</p> <p><i>FY 2008 Accomplishments:</i> The project developed a turret-based system that provides sniper protection and counter engagement capability. This project was funded via a congressional add.</p>			1.120	0.000	0.000	
<p>Demonstration of Holistic Approach to Battlefield Power Utilizing Hybrid Powered Energy Sources and Power Management</p> <p>The objective of this project is to produce highly fuel efficient, optimized, and operationally agile power systems that operate as a stand alone system or part of a battlefield power architecture addressing the full spectrum of power needs.</p>			0.921	0.000	0.000	

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<p><i>FY 2008 Accomplishments:</i> The performance of an advanced power generation and management system was demonstrated using both tactical vehicles for mobile and on-the-move applications and in a fixed frame (without wheels) for stable operations. The power architecture demonstrated was based on the use of an energy source and energy storage devices coupled with solid state conversion of output power to produce highly fuel efficient, optimized, and operationally agile power systems that operate as a stand alone system or part of a battlefield power architecture addressing the full spectrum of power needs. This architecture is known as the Tactical Intelligent Power System (TIPS).</p>				
<p>Fiber-Laser-Array Holder for 100-kW-Class Fiber Laser</p> <p>The objective of this project is to develop and demonstrate a high-energy-laser (HEL) compatible, large-channel-count fiber-laser array holder with micron alignment precision.</p> <p><i>FY 2008 Accomplishments:</i> This project developed and demonstrated a high-energy-laser (HEL) compatible, large-channel-count fiber-laser array holder with micron alignment precision. This eliminates the need for cumbersome individual fiber positioning controls and will allow the outputs of 100 kW fiber lasers to be aggregated in a compact, robust, fieldable package. This allows tactical fiber-laser HELs to be fielded on mobile platforms.</p>	1.000	0.000	0.000	
<p>High Performance Propeller Coating Assessment</p> <p>The objective of this project is to evaluate the effectiveness of two coating processes in reducing friction drag and improving cavitation inception and erosion prevention. These coatings offer significant savings in fuel consumption, reduced logistics costs, and improved service life.</p> <p><i>FY 2008 Accomplishments:</i> This project evaluated the effectiveness of two coating processes in reducing friction drag and improving cavitation inception and erosion prevention. These coatings offer significant savings in fuel consumption, reduced logistics costs, and improved service life. These efforts provide the data necessary to support full-scale testing of the coatings on operational platforms.</p>	1.950	0.000	0.000	

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<p>Low Signature Portable Fuel Cell Power Systems</p> <p>The objective of this project is to develop a methanol based fuel cell power source of 250W to serve as a portable battery charger for existing re-chargeable batteries or a silent auxiliary power unit.</p> <p><i>FY 2008 Accomplishments:</i> The project developed and demonstrated a methanol fueled 250W power source - a portable, highly efficient energy source that can serve as a battery charger for existing re-chargeable batteries or a silent auxiliary power unit. This is a shared development effort with CERDEC.</p>	2.020	0.000	0.000	
<p>Miniature ISR Sensor Technology (MIST)</p> <p>Tagging, Tracking, and Locating (TTL) devices using satellite communications links are bulky. The objective of this project is to reduce the volume of currently bulky tagging, tracking, and locating devices that utilize satellite communication links.</p> <p><i>FY 2008 Accomplishments:</i> The MIST Project has developed the technology to reduce the volume of such a TTL device by several orders of magnitude.</p>	1.997	0.000	0.000	
<p>MX-15DLI -- Operational Airborne Turret Prototype Providing Day/Night Video for Targeting, Tracking, Tagging, and ISR from Aircraft</p> <p>The objective of this project is to develop an airborne turret system that uses laser illumination to make high quality video at long ranges.</p> <p><i>FY 2008 Accomplishments:</i> This project assisted in development of an airborne turret system which uses laser illumination to make high quality video at long ranges during dark-of-night. This video is simultaneous with high resolution FLIR and LGW imaging-designation.</p>	1.450	0.000	0.000	
Predictive Awareness and Network-Centric Analysis for Collaborative Intelligence Assessment (PANACIA)	0.725	0.000	0.000	

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<p>USCENTAF JUON requested a common fusion analytical tool to help intel operators process overwhelming volumes of info and multiple situational awareness pictures, which limited collaboration capabilities. In response PANACIA is being developed to provide an automated multi-source intelligence correlation and fusion capability.</p> <p><i>FY 2008 Accomplishments:</i> USCENTAF JUON requested a common fusion analytical tool to help intel operators process overwhelming volumes of information and multiple situational awareness pictures, which limited collaboration capabilities. In response PANACIA was developed to provide an automated multi-source intelligence correlation and fusion capability and was installed in an operational intelligence center.</p>				
<p>Project Anubis - Tactical MAV for Time-Sensitive Fleeting Targets</p> <p>The objective of this project is to address the need for a Micro-Air Vehicle (MAV) that can engage maneuvering high-value targets.</p> <p><i>FY 2008 Accomplishments:</i> This project developed a Micro-Air Vehicle (MAV) with innovative seeker/tracking sensor algorithms that can engage maneuvering high-value targets.</p>	1.750	0.000	0.000	
<p>Rapid Runway Repair Jumpstart</p> <p>This project aims to develop the capability to rapidly assess and repair damage to airfield pavements after attack .</p> <p><i>FY 2008 Accomplishments:</i> This project developed the capability to rapidly assess and repair damage to airfield pavements after attack to resume operations of both heavy and fighter aircraft and to sustain those operations over time. This provides an enhanced capability to meet current requirements.</p>	2.500	0.000	0.000	
Single Card Solution (SCS)-based National Tactical Receiver (SNTR) Module	0.200	0.000	0.000	

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<p>The SCS is a fully software-defined radio and can be programmed to generate the waveforms and crypto needed to receive the Integrated Broadcast System (IBS), which provides timely tactical intelligence information to warfighters. Legacy IBS receivers are not suitable for use by individuals.</p> <p><i>FY 2008 Accomplishments:</i> This project resulted in completion of a Software Development Unit (SDU) for the SCS to allow proof of concept for the SNTR, and accelerated availability by one year. This makes receipt of the IBS by the individual in the battlespace practical, with major implications for mission effectiveness, fratricide prevention, and personnel recovery. This was a FY06 project funded with split FY06/FY07/FY08 funds.</p>				
<p>Semi-Autonomous Robotic Manipulation and Sensing</p> <p>This project addresses the need by warfighters and first responders for a readily available robotic system with multi-mission tools and sensors for both ISR and IED defeat.</p> <p><i>FY 2008 Accomplishments:</i> This project provided the joint service warfighter and first responders with a readily available robotic system with multi-mission modular tools / sensors for ISR and IED threat prevention, detection, and neutralization. This project was funded via a congressional add.</p>	1.200	0.000	0.000	
<p>TALON LOTUS II</p> <p>The objective of this project is to verify the feasibility of using an alternative sensor that overcomes many of the disadvantages of conventional sensors for detecting and tracking small air-breathing targets.</p> <p><i>FY 2008 Accomplishments:</i> This projected verified the feasibility of an alternative sensor that overcomes virtually all of the disadvantages of conventional sensors for detecting and tracking small air-breathing targets. The specifics are classified.</p>	0.300	0.000	0.000	
<p>Threat Airframe Model Development</p> <p>The objective of this project is to develop a model of a specific classified threat airframe.</p>	0.750	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> The project developed a model of a threat airframe. The specifics are classified.</p>				
<p>University of Alaska Unmanned Aircraft Systems Experimentation, Test, and Evaluation</p> <p>The objective of this project is to continue testing and evaluation of unmanned aerial system operations in northern latitudes and harsh environments.</p> <p><i>FY 2008 Accomplishments:</i> This effort tested and evaluated unmanned aerial system (UAS) operations in northern latitudes and harsh environments. This testing and evaluation included scientific, homeland security and DOD missions. This project was funded via a congressional add.</p> <p><i>FY 2009 Plans:</i> The project will continue the test and evaluation of unmanned aerial system operations in northern latitudes and harsh environments, with a focus on applications in scientific, homeland security, and DoD missions. This project has been funded for an additional year via a congressional add.</p>	1.600	1.200	0.000	
<p>US Government Band-based, Secure, Robust Tactical Wireless</p> <p>The objective of this project is to address limitations in performance and survivability of MANET via an alternative mobile "MESH" wireless system.</p> <p><i>FY 2008 Accomplishments:</i> This project developed an alternate IEEE 802.11 mobile "MESH" wireless protocol-based system for a mobile, wireless battlespace. This system addressed limitations in performance and survivability of MANET.</p>	1.396	0.000	0.000	
<p>USV Application to an Indigenous Vessel: Eduardian/Junk/Dhow</p> <p>The expeditious application of a USV control system onto an indigenous non-military vessel by a forward insertion team provides an outstanding disguise, a familiar vessel in local waters. The objective of this</p>	1.000	0.000	0.000	

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<p>effort is to develop an USV operating system that can be rapidly installed on a foreign vessel and remotely operated.</p> <p><i>FY 2008 Accomplishments:</i> This project developed an USV operating control system application that allows non-technical personnel to rapidly install and remotely operate it on a foreign vessel.</p>				
<p>Reality Vision Mobile Closed Mode Prototype</p> <p>The objective of this project is to develop a customized version of a COTS product for intelligence-gathering applications.</p> <p><i>FY 2008 Accomplishments:</i> This project developed a customized version of the COTS RealityVision™ product that leverages the core functionality of the current product in a manner specifically designed for intelligence-gathering applications.</p>	1.610	0.000	0.000	
<p>Small Craft Integrated Common Picture</p> <p>This project is funded via a congressional add managed under the Rapid Reaction Fund (RRF) program.</p> <p><i>FY 2008 Accomplishments:</i> Funds applies to project via a congressional add managed under the Rapid Reaction Fund (RRF) program.</p>	0.800	0.000	0.000	
<p>Joint Air Defense Operations Center (JADOC) NCR—Cooperative Engagement Capability (CEC) Track Fusion Improvement Initiative (TFII) Phase 2</p> <p>The objective of this effort is to demonstrate the suitability of introducing CEC quality data to the National Capital Region (NCR) Integrated Air Defense System (IADS). Because of CEC's multi-sensor architecture and the available base of military sensors already configured for CEC use, it offers an attractive means of enhancing and extending the NCR IADS and the Southwest Asia air surveillance picture to include</p>	0.475	0.000	0.000	

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<p>multiple, wide-area feeds, including maritime approach data from naval surface and air units operating ashore or at sea.</p> <p><i>FY 2008 Accomplishments:</i> This project demonstrated the suitability and performance benefits of introducing CEC track quality data and fused sensor environment to the JADOC battle management system.</p>				
<p>Extended Reachback Communications</p> <p>This project addresses the need for an increased bandwidth data path from UAVs to ground stations, with an objective of data rate of 350+ Mbps.</p> <p><i>FY 2008 Accomplishments:</i> This project provided a one-way communications link from a UAV to the ground in the 36 - 39.5 GHz frequency band at data rates from 350 Mbps to 1 Gbps. This capability will allow for high data rate exfiltration without the commitment of satellite assets or manned aircraft to accomplish the mission.</p>	1.079	0.000	0.000	
<p>EMC2/IEF Boron Fusion</p> <p>The objective of this project is to continue research towards a proven, validated, and reviewed and approved final design basis for engineering development and construction of full-scale clean nuclear power plants. Boron/hydrogen reactions are radiation-free and non-hazardous and well-suited to direct electric power applications to Navy propulsion, as well as to modest scale ground power plants/systems, able to be run without fossil fuels. Such power plants would revolutionize DoD power systems applications and requirements.</p> <p><i>FY 2008 Accomplishments:</i> This project continued research towards a proven, validated, and reviewed and approved final design basis for engineering development and construction of full-scale clean nuclear power plants. Payoff would be elimination of the need for fossil fueled plants. Boron/hydrogen reactions are radiation-free and non-hazardous and well-suited to direct electric power applications to Navy propulsion, as well as to</p>	0.300	0.000	0.000	

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modest scale ground power plants/systems, able to be run without fossil fuels. Such power plants would revolutionize DoD power systems applications and requirements.				
<p>Scalable High Power GaN T/R Switch Development</p> <p>This projects objective is to dramatically reduce the cost and complexity, and lowering the insertion loss in high power radars (e.g., AMDR or G/ATOR) by enabling a higher level of integration through the replacement of expensive circulators and isolators in Transmit/Receive (T/R) modules with over ten times smaller and less costly high power solid state Gallium Nitride (GaN) T/R switches.</p> <p><i>FY 2008 Accomplishments:</i> This projet created a less costly, high power, solid state Gallium Nitride (GaN) T/R switch that can replace expensive circulators and isolators in Transmit/Receive modules.</p>	2.825	0.000	0.000	
<p>Mini Scanning Mirror Fabrication and Test</p> <p>This effort will refine, fabricate, integrate and test a new laser beam pointing device called the Mini Scanning Mirror (MSM) as a candidate component in the next generation of Infrared Countermeasures (IRCM) system.</p> <p><i>FY 2009 Plans:</i> This effort refined, fabricated, integrated and tested a new laser beam pointing device called the Mini Scanning Mirror (MSM) as a component in the next generation of Infrared Countermeasures (IRCM) system.</p>	0.000	1.750	0.000	
<p>Sensor Fusion Improvement Initiative (SFII) Phase 3</p> <p>The purpose of this project is to evaluate the suitability and performance benefits of introducing Naval Cooperative Engagement Capability (CEC) track quality data and fused sensor environment into the NORAD/NORTHCOM (N/NC) sensor grid.</p>	0.000	0.675	0.000	

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<p><i>FY 2009 Plans:</i> This project evaluates the suitability and performance benefits of introducing Naval Cooperative Engagement Capability (CEC) track quality data and fused sensor environment into the NORAD/NORTHCOM (N/NC) sensor grid. This approach will be demonstrated to offer several advantages:</p> <ul style="list-style-type: none"> • Reliable long range detection of small, low-flying targets • Extensible architecture that can be expanded as required and as new sensors emerge • High resolution tracking and fire control ID mechanisms • Potential for expanded early warning of high risk tracks approaching the NCR and other littoral areas throughout N/NC • The technology used for integration of CEC data into N/NC is also applicable to theater missions using systems such as the Battlespace Command and Control Center (BC3) used in CENTCOM/AFCENT. 				
<p>Project DogStar Command and Control/Communications Systems Protect (C2/CS Protect)</p> <p>The project uses various Computer Network Operations (CNO), Information Technology (IT), Parametric tools and skills, network defense, to operationalize and link the visualization of blue network status, adversarial behavior, vulnerabilities, battle space situational awareness and mitigation options. Project includes a new capability to monitor network status and provide shared situational awareness of network attacks, identify and address threats locally by isolation of affected systems and positive control of network traffic flow.</p> <p><i>FY 2009 Plans:</i> This project will conduct controlled experiments with identical data sets that demonstrated a significantly improved ability to detect and counter network attacks from real world and Department of Defense "Red Teams" during designated exercises in comparison to existing GOTS/COTS tools.</p>	0.000	2.400	0.000	
<p>Rover Compatible SmartCapture Video for Close Air Support</p> <p>This project provides a compact, high-quality digital video/voice/data capture and encoder device (called MilSmartCapture), which is Rover compatible, for Close Air Support. This will permit rapid dissemination of sensor video to commanders and warfighters for battlefield decision-making.</p>	0.000	0.197	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<i>FY 2009 Plans:</i> 20 military grade devices will be delivered.				
Vigilant Sentinel - An EO/NIR based Missile Warning System The Vigilant Sentinel initiative focused on exploiting the spectral signature of the plume of a Man-Portable Air Defense System (MANPADS) to detect its launch, its location, and to initiate a countermeasure in a timely manner. <i>FY 2009 Plans:</i> This project will design, produce, and test a prototype Vigilant Sentinel missile warning system.	0.000	0.950	0.000	
Standoff Terahertz Human Threat Identification The goal of this effort is the development of a THz Ladar sensor capable of detecting trace explosives primarily on human hair, clothing, packaging and other personal effects at standoff ranges of 20 meters. <i>FY 2009 Plans:</i> This effort will develop a THz Ladar sensor capable of detecting trace explosives primarily on human hair, clothing, packaging and other personal effects at standoff ranges of 20 meters.	0.000	2.300	0.000	
AOA Probe Torque Tester The objective of this project is to fabricate and demonstrate the utility of a prototype, on-aircraft tester for the angle-of-attack (AOA) probe for the F/A-18 E/F. <i>FY 2009 Plans:</i> This project will fabricat and demonstrated the utility of a prototype, on-aircraft tester for the angle-of-attack (AOA) probe for the F/A-18 E/F.	0.000	0.162	0.000	
MATRIX System Black Dart VI Demonstration	0.000	0.750	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>The objective of this project is the systematic and measurable demonstration and performance assessment of acquisition, tracking and pointing technologies, and algorithms leading to a directed energy defeat of area defense threats such as Man Portable Air Defense Systems (MANPADS), mortars, rockets, artillery and Unmanned Aerial Vehicles (UAV).</p> <p><i>FY 2009 Plans:</i> This effort will produce multi-function / multi-threat area protection with speed of light engagement, increased area coverage, reduced collateral damage, and persistent engagement.</p>				
<p>MAV System for Enhanced Support of Cave Detection, Attack Planning, BDA, and Mission Planning</p> <p>The program objective is to demonstrate enhanced capabilities for detecting and characterizing (for improved attack planning) cave targets in rough terrain using photogrammetric models built with imagery obtained from a commercial off the shelf (COTS) small unmanned aircraft system's (sUAS) micro air vehicle (MAV).</p> <p><i>FY 2009 Plans:</i> The program will demonstrate enhanced capabilities for detecting and characterizing (for improved attack planning) cave targets in rough terrain using photogrammetric models built with imagery obtained from a commercial off the shelf (COTS) small unmanned aircraft system's (sUAS) micro air vehicle (MAV).</p>	0.000	1.909	0.000	
<p>Remaining FY 2009 Funding</p> <p>Some FY 2009 funds remain uncommitted to allow coverage of new starts. Funding decisions are made throughout the execution years in response to emergent COCOM and service requirements, new threats, and new opportunities.</p> <p><i>FY 2009 Plans:</i> Some FY 2009 funds remain uncommitted to allow coverage of new starts. Funding decisions are made throughout the execution years in response to emergent COCOM and service requirements, new threats, and new opportunities.</p>	0.000	18.047	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
FY 2010 Quick Reaction Fund Plans Quick Reaction Fund plans for FY 2010 <i>FY 2010 Plans:</i> The FY 2010 data call for new start projects will be fielded in the fourth quarter of FY 2009.	0.000	0.000	29.217	
C. Other Program Funding Summary (\$ in Millions) N/A				
D. Acquisition Strategy N/A				
E. Performance Metrics QRF/RRF: Program completion and success will be monitored against program schedule and deliverable stated in the proposals. TTI: In FY 2008, initiated the new start of 14 projects and concluded the activities on many continuing projects with the result of 9 technologies transitioning to the warfighter. In FY 2009, initiate the new start of 7 projects and conclude the activities on many continuing projects with the result of at least 13 technologies transitioning to the warfighter. In FY 2010, initiate the new start of 12 projects per year and conclude the activities on many continuing projects with the results of 11 technologies per year transitioning to the warfighter. RRF: In FY 2008/FY 2009/FY 2010RRF investment decisions are made during the execution years in response to combatant commander requirements and new threats/new opportunities.				

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COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P828: Rapid Reaction Fund	48.911	49.620	49.406						Continuing	Continuing

A. Mission Description and Budget Item Justification

The Quick Reaction Special Projects Program(QRSP) (Program Element 0603826D8Z) supports three separate projects that provide rapid funding to expedite the development and transition of new technologies to the warfighter: The projects that are part of the QRSP are the Quick Reaction Funding (QRF), Technology Transition Initiative (TTI), and Rapid Reaction Fund (RRF). The Defense Acquisition Challenge Program (DACP), formerly part of QRSP, was transferred in FY 2005 and out years to PE0604051D8Z.

RRF is fully executed through the Combating Terrorism Technology Task Force, recently re-designated as the Rapid Reaction Technology Office (RRTO). The RRTO was stood up to provide rapid response to operations in Iraq, Afghanistan and other theaters in support of the of the Oversea Contingency Operations (OCO) and to accelerate the transition of high-potential science and technology projects into operationally useful products in the execution years. In FY 2005/2006, RRTO leveraged the DoD science and technology base and those of the other Federal Departments; stimulated interagency coordination and cooperation; accelerated the fielding of capabilities and concepts to counter emerging threats; and provided feedback to the S&T community to guide long term developmental strategies. The task force anticipated adversaries' exploitation of technology, including available and advanced capabilities. Additionally, the task force exploited technology developed outside of DoD in the commercial sector, in academia and internationally; as well as anticipated adversary's application of available and advanced technology. In FY 2007 RRTO built upon previous experience and pursued projects in: counter cover, concealment and deception in a counter insurgency environment; explored methods and approaches of persistent surveillance stimulation for counterinsurgency; developed alternate power sources for sensors and systems; and expanded human, social and cultural knowledge. In FY 2008 RRTO focused its projects in the areas of small unit situation awareness, program synchronization, non-kinetic operations, strategic communications, biometrics and forensic applications, persistent surveillance infrastructure, maritime surveillance, small unit dispersed capabilities within specific geographic areas, cross organization/agency sharing , network war concept development and strategic multi-layer assessments.

RRF investment decisions are made during the execution years in response to combatant commander, service and other government organizations requirements and new threats/new opportunities. The average length of a RRTO project falls within an 8-12 month range in order to more effectively aid the warfighter.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2008	FY 2009	FY 2010	FY 2011
Imaging Ladar for Rotorcraft Brownout	1.350	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>The objective of this project is to develop and flight test preprocessing electronics designed to prevent the imaging system from triggering on returns from dust.</p> <p><i>FY 2008 Accomplishments:</i> This project fabricated and delivered two analog systems and flight test support at Yuma in simulated dustout conditions.</p>				
<p>Ground-based Sensor/Satellite System</p> <p>This project utilizes Ground-based sensors to measure atmospheric conditions for correlation with satellite data. The satellite imagery is then corrected to provide better resolution of collected imagery.</p> <p><i>FY 2008 Accomplishments:</i> This project provided imagery and meteorological data that was collected and passed to interested organizations.</p>	0.600	0.000	0.000	
<p>Target-of-Opportunity Foliage Penetration LIDAR (TOO-FOPEN)</p> <p>This project worked on critical steps towards providing a high-resolution lidar FOPEN capability by leveraging leading edge technology from others.</p> <p><i>FY 2008 Accomplishments:</i> This project incorporated a team that evaluated flights for intelligence, field testing and system feasibility studies and demonstrated a Concept of Operations (CONOPS). Several aspects of the CONOPS were demonstrated and evaluated including flight and ground processing operations.</p>	1.500	0.000	0.000	
<p>Common Operational Research Environment (CORE) Program</p> <p>This project leverages analytical technologies to educate the officer corps on how to apply theoretical concepts to the problems of terrorism and irregular warfare.</p>	0.782	0.255	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> This project developed the Advanced Analytics course and delivered classroom instruction so that students at the Naval Postgraduate School have the opportunity to apply theoretical concepts and analysis to historical data on insurgencies and terrorist campaigns.</p> <p><i>FY 2009 Plans:</i> Continue with the Advanced Analytics course.</p>				
<p>Persistent Surveillance Challenges</p> <p>This effort will identify challenge problems and example behaviors of interest to DoD and Intelligence Community partners. The challenge problems will focus research and development of advanced techniques and algorithms on DoD/IC priorities. Sensor data and multi-source information will be collected and packaged into exportable files for the broader research community and contractors proposing new capabilities.</p> <p><i>FY 2008 Accomplishments:</i> This project utilized challenge problem scenarios and they were posted to Intelipedia. Exportable challenge problem data packages were provided.</p>	0.430	0.000	0.000	
<p>Ground Moving Target Indicator (GMTI) radar and a passive Electro-Optical (EO) Handover</p> <p>This effort is to develop algorithms to quantify the performance of handover of vehicle tracks between a Ground Moving Target Indicator (GMTI) radar and a passive Electro-Optical (EO) video sensor.</p> <p><i>FY 2008 Accomplishments:</i> This effort has provided algorithms for and quantified the performance of handover of vehicle tracks between a Ground Moving Target Indicator (GMTI) radar and a passive Electro-Optical (EO) video sensor.</p>	10.500	0.000	0.000	
Small Craft Integrated Common Operational Picture - SCICOP	0.880	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>SCICOP provides integrated navigation (charts, sensors) and tactical (mission planning, force tracking) capabilities for operators of small high speed craft. SCICOP is net-centric and supports connectivity between numerous operational craft, unmanned systems and sensor and command headquarters.</p> <p><i>FY 2008 Accomplishments:</i> This project rapidly inserted and demonstrated the SCICOP capability in Riverine and Special Operations craft.</p>				
<p>Project Mirador</p> <p>Project Mirador was the first operational evaluation of Unmanned Surface Vehicles (USV) in direct support of Counter Drug (CD) operations. The objective of Project Mirador was to determine whether USVs can be used as a force multiplier in the Detection and Monitoring (D&M) role.</p> <p><i>FY 2008 Accomplishments:</i> Southern Command (SOUTHCOM) conducted a three-week shore based deployment in FY08 in support of transit zone littoral CD operations using an unmanned surface vehicle (USV) at 2-3 locations in the Dominican Republic.</p>	0.300	0.000	0.000	
<p>Fuel Cell Powered Long Endurance Expendable Unmanned Aircraft System for Intelligence, Surveillance, and Reconnaissance</p> <p>This work will provide an enabling capability for the warfighter and Special Operations Forces (SOF) by providing a longer endurance power source and providing an inexpensive, long endurance UAS for ISR.</p> <p><i>FY 2008 Accomplishments:</i> Efforts have fully automating the operation of the fuel cell propulsion system and the overall operation of a UAS. This phase also continued the development of the wing unfolding hardware and software as well as developed the tube launch system.</p>	0.500	0.000	0.000	
Rapid Reaction Technology Office Testing in Yuma Proving Grounds (YPG)	1.850	1.470	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>Rapid reaction joint services testing support is provided 2 weeks out of every 8 weeks at YPG. These test periods are the opportunity for technologies without enough funding for testing to show their capabilities in a real world setting. The Joint Experimental Range Complex (JERC) was constructed for the purpose of supporting these tests. RRTO supported testing at the JERC allows the under/un- funded new technologies a chance to rapidly demonstrate their capabilities and ultimately be utilized in the war against terrorism.</p> <p><i>FY 2008 Accomplishments:</i> Reports were written on each demonstration and archived on the Anti-Terrorism Enterprise Portal (ATEP) web page for all community members with interest to access. Successful demonstrations were presented to appropriate organizations to take the technology to the next stage and ultimately transition. Unsuccessful but promising technologies are invited back when improvements are completed.</p> <p><i>FY 2009 Plans:</i> Reports will be written on each demonstration and archived on the Anti-Terrorism Enterprise Portal (ATEP) web page for all community members with interest to access. Successful demonstrations will be presented to appropriate organizations to take the technology to the next stage and ultimately transition. Unsuccessful but promising technologies will be invited back when improvements are completed.</p>				
<p>Dynamic Analysis of Stability, Support, Transition, and Reconstruction Operations (SSTRO)</p> <p>SSTRO builds a framework capable of capturing the complexities and interdependencies of SSTRO as a subset of Irregular Warfare (IW).</p> <p><i>FY 2008 Accomplishments:</i> SSTRO provided an analytic tool that is capable of providing insights for force structure and enables the formation of analytic baselines for the IW scenarios in the Defense Planning Scenarios (DPS).</p>	0.454	0.000	0.000	
Extreme Medallion - Phase II	0.900	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>Extreme Medallion Phase II provided the ability to identify unique or missing linkages by expanding technology to other government agencies, giving them a highly reliable tool to provide actionable information to decision-makers and provide expertise to identify implications of importance.</p> <p><i>FY 2008 Accomplishments:</i> Extreme Medallion Phase II demonstrated an innovative approach to combine recent successes in forecasting and network mapping with the advanced functional sequencing of the adversary's business practices to help map a specific critical network function of interest.</p>				
<p>Video Exploitation Phase II</p> <p>Video Exploitation Phase II was to develop a video exploitation cell that is intended to provide timely and accurate geo-locational information to the customer and their deployed elements.</p> <p><i>FY 2008 Accomplishments:</i> This project developed a functioning prototype video exploitation technology integration cell to identify physical locations from the content of terrorist and/or insurgent videos.</p>	0.772	0.000	0.000	
<p>Multiple Fuel Engines</p> <p>The objective of this effort is to meet both the USSOCOM and Air Force requirements for a Non-Gasoline Burning Outboard Engine (NBOE).</p> <p><i>FY 2008 Accomplishments:</i> Developed a 30HP multifuel engine that meets both the USSOCOM and Air Force requirements.</p>	0.647	0.000	0.000	
<p>ARVCOP</p> <p>The ARVCOP objective was to enhance core capabilities to meet the emerging requirements of Riverine craft operators and special operations warfighters. A key element of this is expansion to include additional unmanned platforms and sensors.</p>	0.900	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> ARVCOP has provided integrated navigation (charts, sensors) and tactical (mission planning, force tracking) capability for operators in a variety of craft.</p>				
<p>CVE SCOPE This project launched a one year pilot project to provide Support to a Common Operating Picture (SCOPE) in order to assist USG efforts to counter violent extremism (CVE).</p> <p><i>FY 2008 Accomplishments:</i> CVE-SCOPE tracked and linked the interaction of strategic level thematic/policy guidance, raw media mining and analysis, product development, audience analysis, intelligence collection and analysis, and dissemination components, and fostered information sharing between these elements.</p>	1.803	0.000	0.000	
<p>Biometric Information Technology Evaluation: BITE The BITE project puts together a current baseline that can be used for biometrics systems analysis, gap analysis and prioritization of future investments.</p> <p><i>FY 2008 Accomplishments:</i> The baseline included a comprehensive collection of available information on the deployed biometric systems, how they are currently used, how different employment concepts alter performance and development of a process oriented flow diagram of these individual deployments as an overall system.</p>	0.675	0.000	0.000	
<p>Cooperative Security Pilot The Cooperative Security Pilot project consolidated and aligned methodologies and processes for the assessment, planning and monitoring of complex conflict environments, integrating the capabilities of all instruments of national power, for use by USG departments and agencies, partner nations, International and Non-Government Organizations (IO and NGO), and coalition partners.</p>	1.450	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> The Cooperative Security Pilot project provided a common framework for assessments, planning and metrics; integrated tools for assessment, planning and metrics; and trip reports from in-theater demonstrations.</p>				
<p>Technology Initiatives for Improving Non-Kinetic Capabilities for Irregular Warfare - Phase II</p> <p>This project identifies four technology initiatives that could significantly improve non-kinetic capabilities for irregular warfare.</p> <p><i>FY 2008 Accomplishments:</i> The study team held a workshop with subject matter experts to address the challenge of identifying capabilities for countering corruption.. The team drafted a set of desired capabilities and potentially relevant technologies, and made recommendations regarding a technology-search process.</p>	0.285	0.000	0.000	
<p>Phoenix AFRICOM</p> <p>The objective of this project is to perform systems engineering, architecture development and software prototyping in the development of the data collection, processing, modeling, analysis, and dissemination with specific regard to assisting USAFRICOM in the establishment of a high end analytic cell.</p> <p><i>FY 2008 Accomplishments:</i> tDeveloped a technologically advanced core analytic capability within AFRICOM to produce non-traditional geo-temporal analysis products.</p>	0.250	0.000	0.000	
<p>Victims Documentary</p> <p>The goal of the Victims Documentary project is to help create a suppression sphere around areas of ideologically-based extremism and terrorism.</p>	0.229	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> This project developed a script and storyboard for the preproduction of a documentary film and a fully produced documentary and distribution plan.</p>				
<p>Persistent Sensor Integration Demonstration</p> <p>PSID provides reliable deployment of a secure network for sensor data transmission and communications between riverine force components and local commanders.</p> <p><i>FY 2008 Accomplishments:</i> This project demonstrated improvements in ISR and force protection for riverine forces during patrol, insertion and extraction operations.</p>	0.500	0.750	0.000	
<p>Hostile Fire Detection</p> <p>The HFDS project allows sensor capabilities for detection and false alarm rejection to be validated in multiple field environments against multiple weapons classes.</p> <p><i>FY 2008 Accomplishments:</i> This project performed field testing of the hostile fire weapons system (HFDS).</p>	0.070	0.000	0.000	
<p>ISR-SAT</p> <p>This combined effort provides an improved time critical exploitation and targeting decision process, resulting in actionable intelligence against High Value Targets (HVT).</p> <p><i>FY 2008 Accomplishments:</i> This project combined a proven, fully developed and validated geo-location technology with an existing integrated situational awareness platform using National Technical Means (NTM) data and mapping.</p>	0.477	0.000	0.000	
Explosives Detection - Phase II	0.879	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>This project develops a handheld, stand-off or Remote Explosives Detector (RED) thermal imaging system</p> <p><i>FY 2008 Accomplishments:</i> This project delivered a transportable prototype of a standoff explosives detection system.</p>				
<p>Counter Corruption</p> <p>The objective of the Counter Corruption project is to identify technology initiatives that could enable improved capabilities for countering corruption in host-nation police forces thus contributing to the establishment of security and the rule of law in unstable nations.</p> <p><i>FY 2008 Accomplishments:</i> The Counter Corruption project developed and applied a process for identifying the capabilities needed to counter corruption in a host-nation police force in an irregular warfare environment, and technologies that could help enable such capabilities.</p>	0.233	0.000	0.000	
<p>Phoenix - Phase II</p> <p>This project is to create a methodology to examine and identify a Country of Interest's (COI) current capabilities in nuclear weapons-related technologies.</p> <p><i>FY 2008 Accomplishments:</i> This project developed science and technology-based methods for identifying critical technologies and significant regional actors that can affect progress in nuclear weapons development within selected COIs. The resulting analysis provided input into a risk profile of nuclear weapons capabilities for the COIs.</p>	1.715	0.000	0.000	
<p>Single Card Solution (SCS)</p> <p>The SCS is a two-way tracker module being developed for space-based tagging, tracking, and locating of individuals, vehicles, etc. The SCS also enables two-way, secure, low-probability-of-interception (LPI) data messaging, all in a very small package. Important and novel applications of the SCS have been proposed.</p>	0.250	0.000	0.000	

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<p><i>FY 2008 Accomplishments:</i> Three production prototypes which are in "form, fit and function" exact approximations of the equipment needed in the field were delivered that will undergo further testing and evaluation</p>				
<p>Modeling Criminal Activity in Asymmetric Threat Environments</p> <p>This project utilizes the Institute for the Study of Violent Groups (ISVG) database and other data sources to model interrelationships between terrorism, gang activity, and organized crime. The ability to accurately model these interrelationships has provided a basis for improved strategies and tactics to disrupt insurgent activities earlier in the planning and execution cycle.</p> <p><i>FY 2008 Accomplishments:</i> This project established access to the existing ISVG database, modified the collection focus based upon user requirements and constructed the database viewer application.</p>	0.500	0.000	0.000	
<p>Lighter Than Air Unmanned Sub-scale Demonstration</p> <p>The SKYBUS 80 unmanned airship demonstrates unmanned, scaleable Lighter Than Air Vehicle (LTAV) airship capabilities, techniques, procedures, and manning requirements.</p> <p><i>FY 2008 Accomplishments:</i> Knowledge gained from this demonstration translated directly into plans for larger, production versions of unmanned LTAVs.</p>	0.265	0.000	0.000	
<p>Deductive Database for the Institute for the Study of Violent Groups (ISVG)</p> <p>This project provides a deductive database product, in which to house the model and data in the current ISVG database. This product will replace the current ISVG database.</p> <p><i>FY 2008 Accomplishments:</i> The team built the domain model, transferred existing ISVG data to the new model and performed final testing and a demonstration.</p>	0.205	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>Development of Synthetic Environment for National Security Estimates (SENSE) Capability for Inter-Agency/ International Collaboration</p> <p>The objectives of this project are to train individuals in SENSE to enable them to collaborate and cooperate more successfully in conflict prevention, humanitarian assistance/disaster relief, stability, and post-conflict reconstruction operations and to expand the base of institutions which can help develop and deliver crisis simulations and options for resolution.</p> <p><i>FY 2008 Accomplishments:</i> This project developed scenario and training capacities, conducted an inter-agency event, determined university level of involvement, trained university staff, adapted simulation documentation, conducted additional inter-agency events and determined future investment options.</p>	0.500	0.000	0.000	
<p>Program for Culture & Conflict Studies: A Web Gazetteer for the 21st Century</p> <p>This project allows for the expansion and development of its materials to include more detailed tribal maps, provincial and district summaries, political and tribal leadership profiles, and security analysis reports. This development work provides relevant research in support of current COIN and reconstruction programs in Afghanistan.</p> <p><i>FY 2008 Accomplishments:</i> This project expanded and developed ongoing research and dissemination of socio-cultural / human terrain information on Afghanistan via an open-source web portal. It provided comprehensive assessments of tribal and clan networks in coordination with ongoing COIN operations and needs.</p>	0.104	0.000	0.000	
<p>National Tactical Integrated Processing System (NTIPS) Development Tasks</p> <p>These NTIPS development tasks includes multi-INT web enhancements, the addition of plug & play applications and new data layers.</p>	1.000	1.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> Multi-INT web enhancements and the addition of plug & play applications and new data layers were developed and have been added to the existing infrastructure and used to support military operations within the existing FADE Concept of Operations (CONOPs).</p>				
<p>Deployable Interagency Planning Augmentation Cell (DIPAC)</p> <p>DIPAC provides a reach back strategic communication planning capacity for Embassy country teams to produce interagency country and regional campaign plans to effectively apply the tools of soft counterterrorism to counter violent extremism and ideological support for terrorism.</p> <p><i>FY 2008 Accomplishments:</i> This project developed regional interagency strategic communication campaign plans that support Chief of Mission Priorities and more effectively coordinate DOD, COCOM and Embassy planning, programming and resourcing.</p>	0.150	0.000	0.000	
<p>Detection of Unintended Radiation (DURAD)</p> <p>This will permit moving the previous DURAD system, housed on a large unique manned aircraft, onto a small aircraft or an unmanned aerial vehicle.</p> <p><i>FY 2008 Accomplishments:</i> This work miniaturized the equipment and automated much of the analysis that required a human in the loop in the DURAD system.</p>	0.347	0.000	0.000	
<p>Rethinking Deterrence</p> <p>The Center for Technology and National Security Policy (CTNSP) conducted a workshop to re-examine deterrence concepts in the emerging security environment and consider ways to make the Deterrence Strategic Multi-layer Assessment (SMA) framework more useful for decision makers.</p>	0.095	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)			FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> The project produced a refined framework to inform deterrence (and dissuasion/compellance) strategies, policies, concepts, education and ultimately investment decisions.</p>						
<p>Project Anubis</p> <p>The objective of this project was to develop, prototype, and test Non Line of Sight munitions with man-in-the-loop target ID with very low collateral damage as a proof of concept effort.</p> <p><i>FY 2008 Accomplishments:</i> This project achieved longer range and time of flight as well as precision lethality against different target sets than current squad level capabilities allow</p>			0.670	0.000	0.000	
<p>Phased Approach to Demonstration and Deployment of RealityVision for Critical Counter-Insurgency and Counter-Terrorism Applications</p> <p>This project identifies organizations within the national security, intelligence, homeland security and law enforcement communities that had common technical and operational requirements in the areas of Force Protection, Command and Control, Intelligence, Surveillance and Reconnaissance (ISR) and operational issues in each of these application areas. Reality Vision brings a mobile networked command, control and communications capability to operational users.</p> <p><i>FY 2008 Accomplishments:</i> This effort provided operationally demonstrated software and specifications for force protection.</p>			0.350	0.000	0.000	
<p>Worldwide Hot-Spotting Capability for the Joint Intelligence Preparation of the Operational Environment (JIPOE) Weapons of Mass Destruction (WMD) nexus with terrorist activities (JIPOE WMD-T)</p> <p>The objective of the work is for Gallup to use their radicalization and stability models on their World Poll data to provide an initial estimate of global hot spots, locations that exhibit characteristics of predisposition to instability and radicalization.</p>			0.097	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> JIPOE WMD-T moved from the terrorist act to understanding and mapping the situations and group behaviors that spawn terrorist behaviors on a global basis.</p>				
<p>Targeting and Disruption of IED Networks</p> <p>This effort provided a detailed, layered analysis of financial tracking and illicit networks based upon data that has been collected by the Department of Commerce's Office of Export Enforcement (DOC/OEE).</p> <p><i>FY 2008 Accomplishments:</i> This effort led to the indictment of 20 criminals within the Continental U.S. (CONUS) and overseas that were engaged in terrorist and criminal activities.</p>	0.300	0.000	0.000	
<p>Multiple Heterogeneous Cooperative UAVs Technologies – Phase II</p> <p>This project will develop a cooperative multiple UAV system that provides our soldiers with capabilities to continuously collect intelligence, conduct surveillance, and perform reconnaissance for mission planning and execution, friendly force protection, and exploitation of enemy weaknesses.</p> <p><i>FY 2008 Accomplishments:</i> The project performed the necessary tests and refinement of multiple UAVs technologies for operational deployment. In addition, the project has designed and developed a standard multiple UAVs control, sensor fusion, and integrating software system in a compact, deployable unit suitable for a variety of small UAVs.</p>	0.150	0.700	0.000	
<p>Quantum Dot Vision</p> <p>The project will aid in the development of a covert taggant of people or objects in the non-visible regime. This can be used for blue force as well as adversary tracking when you want to avoid compromising the tagged assets or the actual tag.</p>	0.250	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> This project created robust, long lifetime infrared taggants that are easy to apply to many surfaces (including metals) and can be detected from a distance.</p>				
<p>Immediate Hemostasis with Novel Self-Assembling Peptide Fibers</p> <p>The objective of this work is to provide a better solution to the problem of life-threatening bleeding from combat injuries through the development of revolutionary absorbable fibers that stop uncontrolled bleeding after trauma.</p> <p><i>FY 2008 Accomplishments:</i> The delivered material was an FDA-approved hemostatic material formulated for use by the warfighter.</p>	0.500	0.000	0.000	
<p>Civil Counter Insurgency (COIN) Under Fire</p> <p>This study proposed frameworks that provide analytic approaches to determining what civil actions best contribute to the counterinsurgency effort, and how to structure them (and the networks of services and infrastructure they use) so as to integrate security and civil efforts.</p> <p><i>FY 2008 Accomplishments:</i> This project provided analytic frameworks, initial integrated concepts of operations, a project briefing and a peer reviewed monograph report.</p>	0.100	0.000	0.000	
<p>Montage</p> <p>Montage algorithms and related web-services enable behind-the-scenes, automated Advanced Geospatial-Intelligence (AGI) production hosted on commercial-off-the-shelf (COTS) hardware, allowing the expedient production and delivery of geospatial products to users. Montage reduces AGI production from hours/days to minutes and diminishes the need for expensive, manually-intensive AGI production.</p> <p><i>FY 2008 Accomplishments:</i> This project operationalized the Montage algorithms and web-services.</p>	0.461	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)			FY 2008	FY 2009	FY 2010
<p>Thought-Leader Dialogue Series – Improving Effectiveness of Information Operations (IO) in Counter-Insurgency (COIN) Operations</p> <p>The objective of this dialogue series is to leverage the knowledge and experience of COIN/IO within the USG and private businesses and academe to improve US and Allied COIN and influence efforts.</p> <p><i>FY 2008 Accomplishments:</i> This discussion series provided analysis, experimentation development, and recommended developments to improve IO for COIN operations.</p>			0.200	0.000	0.000
<p>High Antennae for Radio Communications (HARC)</p> <p>This project enables US Forces to implement persistent line-of-sight (LOS) radio communications, both over wide regions and in mountainous or dense urban areas, where communications between war fighters are difficult.</p> <p><i>FY 2008 Accomplishments:</i> The project provided a critical design review (CDR) and HARC developmental testing results.</p>			0.350	0.000	0.000
<p>Advanced Presentation Tools</p> <p>This effort will produce high quality, easy to interpret movies, products and training materials for Force Protection, Operational Planning, and Strategy Development. These materials will be used by the Warfighter, support analysts, and the DoD community.</p> <p><i>FY 2008 Accomplishments:</i> This project developed tools, techniques and procedures to produce effective, illustrative, information rich movies quickly and efficiently.</p>			0.700	0.000	0.000
<p>National Technical Means Support to Tactical User - Phase 1</p> <p>This project has implemented the use of National Technical Means (NTM) as part of the Thunderstorm sensor and data network to enhance tactical user support. Further Details are classified</p>			0.500	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)			FY 2008	FY 2009	FY 2010
<p><i>FY 2008 Accomplishments:</i> Demonstrated the utility of NTM under direct control of the Warfighter and developed the tactics, techniques, and procedures to be used in the future. Further Details are classified</p>					
<p>Smart, Lightweight IR Polymer Emitters for Individual Identification, Friend or Foe (IIFF) and Vehicle Mounted Identification, Friend or Foe (VMIFF) Identify Friend or Foe at Cobra Gold</p> <p>This project supported further analysis of novel lightweight and low cost devices for remote identification using polymer based light emitting diodes (PLED).</p> <p><i>FY 2008 Accomplishments:</i> This project produced four ruggedized VMIFFs for use in Cobra Gold experimentation and field tested new VMIFFs for remote activation from ground laser target designators (GLTD).</p>			0.035	0.000	0.000
<p>Pilot Afghanistan Virtual Science Library (AVSL) at Kabul University</p> <p>The pilot Afghanistan Virtual Science Library at Kabul University offered students, scientists and engineer's access to international scientific, engineering, and technical journals and professional resources. Based on this pilot, the U.S. Civilian Research & Development Foundation (CRDF) developed a plan to extend the capacity to other universities and to Afghan government ministries.</p> <p><i>FY 2008 Accomplishments:</i> The pilot project delivered a fully deployed functional website and VSL rollout assisted by key staff members of Kabul University and a project brief to the Afghanistan Ministry of Higher Education.</p>			0.075	0.000	0.000
<p>Alternative Strategies Program</p> <p>Alternative Strategies is a coordinated, integrated operational analysis program which stimulates the levers necessary to change the radical Muslim ideological environment. Alternative Strategies integrates several analyses, workshops and conferences to empower activist reformers in the Muslim world and set off an indigenous influence campaign for a liberal counter-movement to the radical ideology.</p>			0.876	0.000	0.000

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> The team delivered a written report on Iraqi Women Activists – Information Environment Baseline detailing current access to information technology and recommendations for expanding access. Blog sites and information portals have been developed to monitor and encourage communication among participants and new members.</p>				
<p>Foreign Analysis</p> <p>The objective of this project is to provide strategic decision makers critical information about a foreign country and how it affects United States policy in the Middle East. Further details are classified</p> <p><i>FY 2008 Accomplishments:</i> This project developed an open source system tool for tracking comments by foreign elites in response to world activities, an open source system for tracking comments by Mideast regional elites regarding opinions toward the specified country and updated the Digital Workbook for the sponsor-designated country up to current status. Further details are classified.</p>	4.363	0.337	0.000	
<p>Information Operations (IO) to Defeat Coalition Enemies in OEF</p> <p>This project provides expertise and resources to both develop IO plans and educate forward deployed staffs.</p> <p><i>FY 2009 Plans:</i> This project provides direct support to special operations units deployed in OEF. A faculty led student seminar has been in continuous and direct contact with the deployed SOF headquarters to develop IO plans to support the campaign against coalition enemies.</p>	0.000	0.300	0.000	
<p>Asymmetrical Lasercomm for Unmanned Vehicles</p> <p>The goal of this project is to develop and demonstrate small gimbaled modulating retroreflector (MRR) terminals for high bandwidth free space optical (FSO) communications between a base station and an unmanned vehicle (UxV) with limited payload capacity.</p>	0.000	1.305	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2009 Plans:</i> This project produces and demonstrates an optical communications system that links an unmanned aerial system (UAS) with a ship or shore platform ground station for downloading covert, free streaming video or stored data.</p>				
<p>Counter-Motivation Block 1 (CMB1)</p> <p>The goals of CMB1 will help to create a suppression sphere around areas of ideologically-based extremism and terrorism. The intent of the individual projects is to produce targeted products for young and at-risk audiences in the Muslim world and through those products introduce ideas, content, and communication mechanisms that will seal the audiences off from radicalization.</p> <p><i>FY 2009 Plans:</i> This program deploys several independent programs into conflict regions using the latest advances in social media and networking technology.</p>	0.000	0.752	0.000	
<p>Griffin Autonomous Unmanned Surface Vehicle (USV) Project</p> <p>This project will provide a mission level autonomy system for use with multiple unmanned surface vessels.</p> <p><i>FY 2009 Plans:</i> This project develops and installes autonomous command and control systems and integrated associated sensors on two USVs which will permit the unmanned systems to cooperatively execute a maritime domain awareness task.</p>	0.000	1.500	0.000	
<p>Tracking Transnational Illicit Networks Using New Methods of Analysis & Communication</p> <p>This project is a collaborative research effort involving midshipmen at the United States Naval Academy who identify and analyze linkages among transnational criminal networks smuggling drugs and other contraband from Latin America or Africa to jihadist terrorists within Europe or the United States.</p>	0.000	0.097	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2009 Plans:</i> This project provides junior naval and marine officers, with a wealth of new analytical skills and knowledge about real and potential links among criminal and jihadist networks.</p>				
<p>Foliage Penetration Reconnaissance, Surveillance, Tracking and Engagement Radar (FORESTER) Enterprise-Based Exploitation (FEBE)</p> <p>The Objective of the FEBE effort is to rapidly develop and demonstrate an automated exploitation tool that processes detections from the FORESTER radar and automatically detects activity, suppresses persistent false alarms and discriminates between people and wildlife.</p> <p><i>FY 2009 Plans:</i> This project develops algorithms and software that performs automatic processing of the data to allow non-expert users to rapidly and reliably detect areas of significant activity, while rejecting false alarms and non-threat activity.</p>	0.000	0.500	0.000	
<p>Network Warfare: What's Next?</p> <p>This project conducts research on Network Warfare with focused research teams to explore the specific areas of Iraq, Afghanistan, the overall GWOT, Cyberspace and "Influence operations."</p> <p><i>FY 2009 Plans:</i> Initial research follows an in depth study with faculty-student teams drilling down in greater detail regarding the future of Network Warfare.</p>	0.000	0.050	0.000	
<p>Strategic Assessment</p> <p>This project is researched, implemented and prototyped emerging cultural modeling programs, geospatial analyses techniques, precision influence targeting techniques, and other strategic multilayer analysis techniques in support of the operational customers desire to gain a greater understanding of the global strategic situation.</p>	4.262	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> This project will produce situational reports and social analysis.</p>				
<p>RRTO Visualization Tool</p> <p>This was a pilot project to quickly, and cost effectively, deliver a core visualization capability.</p> <p><i>FY 2008 Accomplishments:</i> The RRTO Data Visualization took key RRTO data contained in past and present versions of the PowerPoint fishbone file, made it highly interactive, and provided interactive visual filtering and searching capabilities.</p>	0.125	0.000	0.000	
<p>Discourse Analysis</p> <p><i>FY 2008 Accomplishments:</i> The objective of this effort was to identify a set of leading cues/indicators of adversary action based on analysis of discourse accent and discursive practices, develop a methodology to detect/extract/exploit these cues/indicators and identify existing or modified tools to operationalize the methodology.</p> <p><i>FY 2009 Plans:</i> This project provided a socialization workshop with the analyst's final report.</p>	0.200	0.000	0.000	
<p>Remainder of FY09 funding</p> <p><i>FY 2009 Plans:</i> Investment decisions are made during the execution years in response to combatant commanders, services and other government organization's requirements and as new threats emerge or new opportunities are presented. RRTO's FY09 goals include: expand Irregular Warfare focus beyond Afghanistan / Iraq; examination of terrorist / criminal interfaces; development of non-kinetic capabilities including support for strategic communications; and increased interagency coordination.</p>	0.000	39.004	0.000	
RRF 2010 Plans	0.000	0.000	49.406	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2010 Plans:</i> RRF investment decisions are made during the execution years in response to combatant commander, service and other government organization's requirements and as new threats emerge or new opportunities are presented. Research and coordination with organizations throughout DoD and other government agencies will help identify areas critical to developing future counterterrorism/counterinsurgency capabilities. FY10 plans include development of ISR and multi-int fusion capabilities through the ongoing Project Thunderstorm exercise series, manipulation and exploitation of large data sets, continued support for projects that explore the overlap of criminal and terrorist groups, development of forensics capabilities to exploit hostile sites, expansion of capabilities to foster small dispersed until operations and initiation of a business cell to foster interaction between DoD and small companies.</p>				
RRF FY11 Goals	0.000	0.000	0.000	
Augmented Reality to enhance Special Warfare Domain Awareness	0.000	1.600	0.000	
<p><i>FY 2009 Plans:</i> Congressional Add to be executed</p>				
C. Other Program Funding Summary (\$ in Millions)				
N/A				
D. Acquisition Strategy				
N/A				
E. Performance Metrics				
QRF/RRF: Program completion and success will be monitored against program schedule and deliverable stated in the proposals.				
TTI: In FY 2008, initiated the new start of 14 projects and concluded the activities on many continuing projects with the result of 9 technologies transitioning to the warfighter.				

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<p>In FY 2009, initiate the new start of 7 projects and conclude the activities on many continuing projects with the result of at least 13 technologies transitioning to the warfighter.</p> <p>In FY 2010, initiate the new start of 12 projects per year and conclude the activities on many continuing projects with the results of 11 technologies per year transitioning to the warfighter.</p> <p>RRF: In FY 2008/FY 2009/FY 2010 RRF investment decisions are made during the execution years in response to combatant commander requirements and new threats/new opportunities.</p>		

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COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P829: Technology Transition Initiative (TTI)	28.169	26.835	29.361						Continuing	Continuing

A. Mission Description and Budget Item Justification

The Quick Reaction Special Projects Program (Program Element 0603826D8Z) has three sub-elements: the Technology Transition Initiative (TTI), the Quick Reaction Fund (QRF) and the Rapid Reaction Fund (RRF). The fiscal controls above represent the investment of the QRSP Program funding for the TTI Program.

Authorized by Title 10 and Section 215 of the FY2003 Defense Authorization Act, the Technology Transition Initiative (TTI) facilitates the rapid transition of new technologies from the DoD science and technology (S&T) base into DoD acquisition programs. The program addresses the funding gaps that exist between the time a mature technology is demonstrated and the time it can be funded and procured for use in an intended weapons system or operational capability for the warfighter.

TTI projects are selected by the Technology Transition Manager (Office of the Deputy Under Secretary of Defense (Advanced Systems and Concepts) (DUSD(AS&C)) in consultation with representatives of the Technology Transition Council (TTC). (The TTC is comprised of the Acquisition and S&T executives from each Service and Defense Agency and representatives from the JROC.) The call for TTI proposals is distributed to the DoD Services and Agencies through the Technology Transition Working Group (TTWG) members, designated by the TTC. The TTWG members receive proposals from their Service/Defense Agency S&T base, conduct a prioritization based on Joint, Service or Agency capabilities needed and submit them to the OSD TTI Program Manager. The Technology Manager's senior staff consolidates the proposal submissions, evaluates the Service/Agency recommendations, reviews new start selection options based on available resources, and prepares a recommended new start selection list to the Technology Transition Manager for funding. The Technology Transition Manager, in coordination with the TTC, selects the highest priority proposals for funding.

The OSD FY 2009 proposal call memo was signed out by the Technology Transition Manager on February 27, 2008, requesting the Services, Agencies and CoComs provide their prioritized inputs by April 30. These proposals were to focus on projects having great impact for the warfighter, (i.e., potentially fewer projects with larger dollar values) that enable affordable and decisive military superiority. The memo also indicated that OSD priorities were to deliver focused technology to meet warfighter needs. To meet these needs and accomplish the Department's strategic objectives, critical capabilities have been defined and aggregated into the following high-level mission areas: Total Battlespace Awareness; Stability Operations, Cultural Awareness, and Force Management; Command, Control and Information Management & Net-Centric Operations; Protection; Joint Training; and Tailored Force Applications. A total of 26 proposals were formally submitted to OSD, addressing these mission areas. These proposals are being evaluated against the following evaluation criteria: TTI funding must accelerate product transition, project is from DoD S&T base, cost sharing to leverage TTI funding, project duration less than four years, established exit criteria, potential for joint use, value to the warfighter, sufficient technology maturity, and commitment to transition/acquisition.

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Final selection of FY 2010 TTI new start projects will be determined in in the July 2009 timeframe. A listing of initiatives under review for selection by OSD can be provided to congressional staff members during the budget review.					
B. Accomplishments/Planned Program (\$ in Millions)		FY 2008	FY 2009	FY 2010	FY 2011
<p>AIM-9X Electric Arm Fire Device (EAFD) (Navy)</p> <p>The Joint Requirements Oversight Council (JROC) validated the early transition of "In-Line" Electric Arm Fire Device (EAFD) with Exploding Foil Deflagrating Initiator (EFDI) Technology into the AIM-9X Sidewinder Missile Air-to-Air Weapon System as a FY07 new start. The outcome of early EAFD transition is enhanced US Navy aircraft carrier flight deck operations, a significant reduction in USN/USAF logistic support costs, greater weapons system reliability and enhanced system safety. The two-year project is under the sponsorship of Naval Air Systems Command (NAVAIR) Program Executive Office for Weapons PEO(W) Program Management Activity with transition to production in CY2008. The lead Service is the Navy.</p> <p>The primary outputs of this early transition program are as follows: 1) Eliminates the current burden on ordnance crews to manually arm/disarm AIM-9X Sidewinder missiles after every sortie; 2) Improves cold weather flight operations; 3) Improves Nuclear, Biological, Chemical Operations; 4) Eliminates logical reprogramming operations; 5) Improves 9X Weapon System Probability of Launch by 1%-3%; 6) Lowers weapon system radar cross section planar cross section on aircraft; 6) Enhances weapon system safety; 7) Enables 9X Sidewinder canister employment (i.e., USN Sea Serpent).</p> <p>Previously Accomplished: Qualification testing of Exploding Foil Deflagrating Initiator (EFDI) subassembly completed. Qualification of Electronic Arm Fire Device (EAFD) component completed. Began integration and design verification testing of EAFD with the Block II Sidewinder air-to-air missile. Initiated design coordination with Safety Boards.</p> <p><i>FY 2008 Accomplishments:</i> The following events have been completed: integration and design verification testing of EAFD with Block II 9X Sidewinder; and ground based environmental qualification testing of EAFD with Block II 9X Sidewinder. Qualification testing started in May 2008.</p>		0.403	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2009 Plans:</i> Engineering Change Proposal (ECP) approval is projected to occur in FY 2009. Upon ECP approval, the plan is to transition EAFD with EFDI technology into Block II 9X Sidewinder production. Transition Manager is NAVAIR, PEO(W), PMA-259.</p>				
<p>Automated ALRE Reading (AutoREAD) Sheets (Navy)</p> <p>AutoREAD is an automation and process improvement project that uses personal data assistants (PDAs) to eliminate paper logkeeping and streamline the collection, analysis, and reporting of launch and recovery equipment preventative maintenance measurement data. Its purpose is to reduce Aircraft Launch and Recovery Equipment (ALRE) maintenance workload and gain improvements in equipment readiness, safety, engineering support, and fleet metrics. It creates an infrastructure for continuous ALRE reliability improvement into the future.</p> <p>The primary outputs and efficiencies of this program are as follows: 1) Improvements in quality, accuracy and legibility of measurement data by 20%; 2) Process improvement from the use of integrated Reading Sheets (1-2 hours per maintenance action); 3) Process improvement from the use of electronic signatures on arresting gear (AG) Reading Sheets (1 hour savings per maintenance action); 4) Reduce effort and cost required to track completion of Maintenance Actions with associated Reading Sheet data.</p> <p>Previously Accomplished: Development of software requirements specification, system design. Coding and Testing of AutoREAD including Integration testing with Aviation Data Management and Control System (ADMACS). Procurement of hardware for initial ship test. Successfully demonstrate AutoREAD application.</p> <p><i>FY 2008 Accomplishments:</i> Completed Land Based integration testing, ship board integration testing, and production deliveries. Completed transition of AutoREAD under ADMACS Block 2. The planned elements of AutoREAD were demonstrated as a component of ADMACS block 2 production deliveries.</p>	0.400	0.000	0.000	
<p>Diagnostics Avionics Tester for On-aircraft Maintenance (Navy)</p>	0.738	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>The F/A-18 Program Office has an immediate need for Support Equipment (SE) items that can reduce maintenance costs, and reduce ambiguities between systems and components at the on-aircraft maintenance level. The outcome of the "Diagnostics Avionics Tester for On-Aircraft Maintenance" Technology Transition Initiative (TTI) project will be to incorporate net-centric diagnostics technologies into the Tactical Reconnaissance (TAC RECCE) and Electro-Optical Infrared (EO/IR) F/A-18 Maintenance Programs by developing a prototype Diagnostics Avionics Tester and Net-Centric Diagnostics Framework that can replace the AN/USM-681 Electro-Optics Pallet/Pod Tester (EOPT).</p> <p>The exit criteria will be a successful demonstration of the prototype Diagnostics Avionics Tester and Net-Centric Diagnostics Framework with a F/A-18 squadron equipped with the AN/ASQ-228 Advanced Targeting Forward Looking Infrared (ATFLIR) Pod and a F/A-18 squadron equipped with the AN/ASD-12 Shared Reconnaissance Pod (SHARP).</p> <p>The primary outputs and efficiencies include: a one percent increase in ATFLIR and SHARP operational availability; (2) cost reduction for maintenance and repair; (3) increase in fault detection and fault isolation rates; (4) run time reduction for F/A-18 Automated Test Equipment at the off-aircraft maintenance level; (5) percent reduction in false alarms/cannot-duplicate occurrences; and (6) percent reduction in logistics footprint for the new Support Equipment at the on-aircraft maintenance level.</p> <p>One prototype and a Level 3 technical data package will be provided to the F/A-18 Program Office. The F/A-18 Program Office will procure production versions of the Diagnostics Avionics Tester and Net-Centric Diagnostics Framework beginning in FY 2008 with life cycle support implemented in the first year of procurement. Deliverables will be due in FY 2009 and FY 2010.</p> <p>Previously Accomplished: Procurement of militarized commercial-off-the-shelf (COTS) tablet PC to serve as the processor unit for the prototype Diagnostics Avionics Tester. Completion of development of the avionics interface for the prototype Diagnostics Avionics Tester. Completion of first software builds for the Net-Centric Diagnostics Framework, ATFLIR Computer Software Configuration Item (CSCI), and SHARP CSCI.</p>				

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2008 Accomplishments:</i> The Diagnostics Avionics Tester and Net-Centric Diagnostics Framework successful completion of all test efforts and approval for flight line use. Demonstrated prototype Diagnostics Avionics Tester and Net-Centric Diagnostics Framework at a F/A-18 squadron equipped with the AN/ASQ-228 ATFLIR Pod, and a F/A-18 squadron equipped with the AN/ASD-12 SHARP. Provided one prototype and a Level 3 technical data package (TDP) to the F/A-18 Program Office. Incorporated net-centric diagnostics technologies into the Tactical Reconnaissance and Elector-optic/Infrared F/A-18 Maintenance Programs by procuring production versions of the Diagnostics Avionics Tester and Net-Centric Diagnostics Framework to replace the AN/USM-681 Electro-Optics Pallet/PoD tester (EOPT).</p>				
<p>Image Compression for Digital Precision Strike Suite (Navy)</p> <p>The purpose of the Image Compression for Digital Precision Strike Suite project is to transition a matured compression software suite to Special Operations Forces (SOF) that will shorten the upload time for image and video data files. It provides a much needed capability to mitigate bandwidth limited communications problems without compromising the image quality and information needed for subsequent analysis upstream.</p> <p>The primary outputs of this project are as follows: A compression software suite with high quality image and high compression ratio for SOF radios that mitigate today's communication data link issues.</p> <p><i>FY 2008 Accomplishments:</i> Implemented software suite on Precision Strike Suite - SOF laptops and completed testing and validation in field units.</p>	0.400	0.000	0.000	
<p>N-Acetylcysteine (NAC) Clinical Trials for Hearing Loss Prevention (Navy)</p> <p>The Joint Requirements Oversight Council (JROC) validated the capability need for the investigation into NAC for prevention of hearing loss. The outcome of the project is to facilitate the final transfer of this cutting edge pharmacological technology of antioxidant therapy for the prevention and reduction of hearing loss from the basic science laboratory into the operational environment. This two-year project is under</p>	1.000	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>sponsorship of Navy Medical Research Center, with completion of development and demonstration by end of FY 2008, transition to pharmacy by FY 2009.</p> <p>The primary output for this study is a 40 to 50% reduction in average threshold shifts for NAC participants compared to placebo.</p> <p><i>FY 2008 Accomplishments:</i> The following efforts have been completed or initiated: 1) Completed clinical study preparation, documentation and site preparation and initiation; 2) Studied execution, data analysis, and obtained FDA approval; 3) Began transition with acquisition of national stock number through the Defense Medical Standardization Board; 4) Completed transition via Tri-Care Management Authority for Pharmacy and future integration into operational forces.</p> <p>This project was previously referred to as "Prevention of Hearing Loss -- Hearing Pill"</p>				
<p>Operational Gliders for Battlespace Reconnaissance and USV Surveillance (Navy)</p> <p>The Chief of Naval Operations and the Oceanographer of the Navy validated the requirement for an operational glider for battlespace reconnaissance and included ocean gliders as part of the Littoral Battlespace Sensing, Fusion and Integration (LBSF&I) Program of Record. The Technology Transition Initiative will accelerate the transition of ocean gliders to operational readiness.</p> <p>The outcome of this program is the development of robust ocean gliders that are certified for operational deployment (six prototypes of improved and hardened gliders will be initially delivered) together with an operationally feasible (roll-on, roll-off) deployment and recovery system, a command and control system, and an approved manufacturing process. The completion of the operational glider prototypes, all other deliverables, demonstrations and documentations will be completed at the end of FY 2008. The TTI Program funding accelerates the achievement of technical readiness by 36 months (FY 2008 vs. FY 2011).</p> <p>The primary output and efficiency to be achieved in this project is operationally robust underwater gliders that obtain data to reduce the uncertainty in the performance prediction of the acoustic sensors</p>	0.800	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>by providing near real-time 3-D acoustic properties of the ocean, including sonic layer depth, ducting conditions and sound channel characteristics. Networks of gliders together with distributed networked bottom sensors reduce the occurrence of false contacts. Additional outputs and efficiencies include the following: (1) glider configuration such that they can accommodate optical sensors that facilitate non-acoustic Anti-Submarine Warfare (ASW) measurements; (2) an approved manufacturing capability so that acquisition of large numbers of gliders can facilitate the fleet establishing networks of 10-30 gliders. (These networks of gliders provide real-time environmental data in the operational area of interest. These data provide mission planning modules with the initial and evolving deep or shallow water environmental data); (3) gliders with the capability to provide long duration sampling (1 month to 3 months), and to provide real-time data at a far lower cost (present estimate is \$4 per glider vertical profile vs. present cost of \$1000 per profile via ship) with immediate delivery of data to operational fleet commands; (4) gliders that, once deployed, do not (now) and will not require support from fleet assets such as ships, aircraft, or submersible platforms; piloting and data flow will be remote but real-time with global coverage. The project will achieve roll-on-roll-off deployment from surface platforms and a common command and control system for all glider types.</p> <p><i>FY 2008 Accomplishments:</i> The following tasks have been completed or initiated: 1) Completed construction of six prototypes of improved and hardened gliders; 2) Approved certification of the manufacturing process, documentation and configuration control systems completed; 3) The final prototypes, along with the deployment/recovery systems and command system were tested at sea; 5) Approvals and certification completed; 6) The design criteria and tested prototypes are timed to be synchronous with the initiation of LBSF& I funding for acquisition.</p>				
<p>Self-Powered Tray Ration Heater (Army)</p> <p>The objective of the Self-Powered Tray Ration Heater (TRH) project is to apply thermoelectric technology to a standard TRH to enable operation independent of vehicles and generators. The TRH was designed to heat 18 six-pound packages of shelf stable food (tray packs) for Company-sized groups of Warfighters. The TRH uses a commercial oil burner (configured to burn JP8) to heat 10-15 gallons of water to close to 200°F. This allows tray packs to be placed in the hot water for 30 minutes to bring them up to serving</p>	0.450	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>temperatures. Versions of the TRH are used by the Army in the Assault Kitchen (AK), the Marine Corps in the Tray Ration Heating System, and the Air Force in the Single Pallet Expeditionary Kitchen. A secondary objective of this program is to provide a universal STRH that all four services as well as Federal Emergency Management Agency (FEMA) can procure, operate and support. The current TRH requires approximately 200 watts of power for operation, which must be supplied by a (High Mobility Multipurpose Wheeled Vehicle) HMMWV or generator. A self-powered capability improves overall reliability, availability, and maintainability characteristics, since a generator or vehicle power supply are inherently less reliable and require more maintenance than solid-state thermoelectric modules. Due to the limited number of HMMWVs available to Food Service, alternative mounting configurations with HMMWV trailers are needed. The self-power version of the TRH along with a Trailer mounted version of the AK will allow the HMMWV to be used for other missions when the AK is set up and feeding Warfighters. This project has applications to all DoD services and FEMA.</p> <p>The primary outputs of this program are as follows: a standard TRH to enable operation independent of vehicles and generators.</p> <p><i>FY 2008 Accomplishments:</i> The following tasks were completed or initiated: 1) Conducted in-house technical and operational tests, producibility study, and production of 10 test units; 2) Technical and operational tests in the field; 3) Updated Technical Data Packages and Technical Manuals; 4) Developed joint requirement and procurement document; transferred to procurement.</p>				
<p>Sense and Avoid (SAA) for Small UAVs (SUAV) (Air Force)</p> <p>Air Force has validated the need for a Sense and Avoid (SAA) capability for Small Unmanned Aircraft Systems (SUASs). The outcome of Small Sense and Avoid System (SSAASy) is to create a miniaturized version of Air Force Research Laboratories' (AFRL) Phase-I Advanced Technology Demonstration SAA system developed for the RQ-4 Global Hawk UAS. The miniaturized system will include the hardware and software necessary to alert the ground-based pilot and/or an on-board collision avoidance maneuvering subsystem of any potential collisions. The system enhances the situational awareness of a SUAS in both the National Airspace System (NAS) and in operational environments, and will go a long way in meeting</p>	0.200	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>the Federal Aviation Administration's standards for granting UASs access to the NAS. Development and demonstration will be completed by FY 2010/2Q. Transition will be to both the Air Force Small UAS office and to the Army Project Manager for UASs in FY 2010.</p> <p>The primary outputs and efficiencies to be demonstrated in this technology transition initiative are (1) decrease in the hardware's size, weight, and power to fit in the RQ-7 Shadow size SUAS; (2) identification of and creation of software architecture able to integrate SAA data seamlessly with SUASs' ground control stations; (3) identification of and creation of a system that requires minimal modification to the unmanned aircraft; and (4) estimated 24 month advancement of a SAA system transitioning to the field.</p> <p><i>FY 2008 Accomplishments:</i> The following tasks were completed: 1) Completed design and system prototype fabrication; 2) Completed size, weight, and power (SWAP) trade study; 3) Completion of flight demonstration; 4) Transition of technical solution to the Shadow UAS program</p>				
<p>Unmanned Surface Vehicles for Littoral Combat Ship Missions (Navy)</p> <p>The Joint Requirements Oversight Council (JROC) validated the capability need for Unmanned Sea Surface Vehicles (USSVs) for Littoral Combat Ship (LCS) Missions. The outcome of this TTI program will provide enhanced capabilities, via the USSV, that will be a key enabler for LCS's ability to perform its three primary missions of Mine Countermeasures (MCM), Anti-Submarine Warfare (ASW) and Surface Warfare (SuW), as well as other missions such as Expanded Maritime Interception Operations (EMIO) and Electronic Warfare (EW). TTI Program funding will provide the final level of maturity to transition the USSV to acquisition for deployment on the LCS.</p> <p>The output of the project will be to design and build an advanced USSV that is optimized for LCS missions. The lead service is the Navy.</p> <p><i>FY 2008 Accomplishments:</i> The second payload was installed on the USSV. Payload/USSV At-Sea Test: the performance of the Payload/USSV system was characterized in at-sea tests. Technical package describing the Payload/</p>	2.000	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
USSV system were delivered to LCS Mission Module Program Office. The Transition Manager for this TTI Program is the LCS Mission Module Program Office. The final demonstration was completed in FY 2008. TTI program completion date is 30 September 2008.				
<p>Warfighter Hearing Enhancement and Protection (Navy)</p> <p>In FY 2006 Office of the Chief of Naval Operations (OPNAV) validated the need to improve aircraft carrier flight deck crew helmets, including better hearing protection and communication ability, by establishing the Flight Deck Cranial (FDC) program. The FDC is to surpass existing helmet performance in key areas related to safety standard compliance and life cycle efficiency per FY 2005 Deputy Assistant Secretary Navy (Safety) Business Case Analysis. FDC is sponsored by OPNAV N8 with planned transition to U.S. Navy operational commands in FY 2010. Transition PM is Naval Air Systems Command PMA202 Aircrew Systems.</p> <p>An Evolutionary Acquisition Strategy and a Spiral Development approach will be used to deploy qualified hearing enhancement and protection equipment technologies: (1) replace existing subsystems during routine maintenance, (2) Engineering Change Proposal (or similar) to existing hearing/head protector, (3) system replacement to attrited system(s), and (4) standardized system acquisition. FDC system outputs and efficiencies include (1) American National Standards Institute (ANSI) speech intelligibility test demonstrates 20 percent gain or more, (2) ANSI hearing protection test demonstrates 3 dB gain or more, (3) greater than 50 percent use the hearing protection correctly (current estimate is 7 percent), (4) fit an estimated 95 percent of the U.S. Navy personnel population (size, shape, gender, race), (5) meets/ exceeds ANSI head protection standard, (6) compatible with chem-bio and fire protection clothing.</p> <p><i>FY 2008 Accomplishments:</i> Final Operational Demonstration of hearing enhancement and protection technologies were completed. Developed Integrated Logistics Support Plan (Implementation, Configuration Control, Maintenance, Tech Manuals, Training Package, etc) to transition hearing protection and communication technologies for use in existing flight deck helmet. Spiral Output - approved existing flight deck helmet with improved hearing protection and communication technologies for fleet procurement. TTI Efforts Culminated in follow-on Research Development Test and Evaluation (RDT&E) and Other Procurment Navy (OPN) funding.</p>	1.400	0.000	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>Accelerated Implementation of Extremely Insensitive Detonating Substance (EIDS) and Insensitive Munitions Solution in 155mm Artillery Ammunition (Army)</p> <p>This effort accelerates the transition to production of technologies that eliminate or minimize accidental hazards for munitions. Insensitive Munitions (IM) minimize damage or loss of life and property due to reduction in sensitivity of the munition to external stimulus. Compliance is required by public law and mandated by DoD regulation. In addition to meeting IM requirements, the technologies will satisfy Extremely Insensitive Detonating Substances (EIDS) classification requirements for the 155mm high explosive loaded artillery projectiles being procured by the Army and USMC. EIDS munitions dramatically enhance the warfighters' survivability by reducing the reaction to unplanned stimuli, e.g., fire, mass detonation, etc., and increase safe storage capacity of ammunitions by lowering the quantity distance in accordance with the relaxed requirements that go with EIDS designation.</p> <p>Program Outputs and Efficiencies: EIDS classification will change the current Hazard Class from 1.1 (greatest hazard) to 1.6 (least hazard). The 1.6 hazard classification level allows more compact storage and shipping than otherwise, with consequent reduction of logistics costs for this widely procured Army and USMC projectile. This project will accelerate the fielding of new IM technologies from forecasted FY2 012 to FY 2009.</p> <p><i>FY 2008 Accomplishments:</i> Producibility studies of candidates made with non-traditional materials were applied to manufacture production quantities of the explosive formulations. The resulting output of explosive will subsequently be used to optimize the loading parameters of the artillery projectiles. Some of the parameters are: temperature of the empty shells, temperature of the molten explosive, rate of loading, cooling cycles, etc. This critical step will ensure successful transition of the technology to the industrial base. The properties of the explosives, e.g., thermal, physical and chemical, are going to be further characterized as part of the safety requirements. This data will also fulfill the requirements of the Energetic Material Qualification Board (EMQB) test matrix which ensures safety and long term suitability of the material; Simultaneously the new explosive and IM technologies are to be applied to the projectile design for testing in the 155mm howitzer systems. Gun qualification tests to address safety, performance and reliability requirements were commenced.</p>	3.300	1.950	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p><i>FY 2009 Plans:</i> Using the FY2008 EMQB test matrix, all the long-term tests will be completed to qualify a new insensitive explosive formulation. The gun qualification tests will also be concluded. Any complimentary modifications to the design will be accomplished. Lethality assessment will be carried out by a full-scale arena test. Formal IM tests will be performed to demonstrate compliance with current DOD IM requirements and determine the final EIDS classification. Conclusion of this project will result in a Technology Readiness Level 9 (TRL 9) maturity which will be implemented by the Project Manager Combat Ammunition Systems for their applicable programs.</p>				
<p>Combined Arms Planning and Execution-monitoring System Integration into Force XXI Battle Command Brigade and Below (FBCB2) (Army)</p> <p>This program addresses an emerging requirement for a planning capability to reside within Force XXI Battle Command Brigade and Below (FBCB2). In Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF), FBCB2 has emerged as a critical Command and Control (C2) system in both traditional and asymmetrical warfare environments. However, FBCB2 does not currently contain planning software. Both the current FBCB2 Operational Requirements Document and the draft Capabilities Development Document for the Joint Battle Command Platform (JBCP) cite requirements for decision support aids, mission planning/rehearsal, mission execution and the ability to interface with onboard/system-specific Command Control and Communication (C3) tools. The output of this program is to provide an automated planning and execution tracking capability within FBCB2. The planning capability will be derived from Combined Arms Planning and Execution-monitoring System (CAPES) and the emphasis is placed at the tactical level, allowing lower echelon commanders to provide task status reporting vertically through the Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) architecture. The planning and execution tracking will provide a total situational awareness through the sharing of subordinate unit and sister unit plans.</p> <p>Outputs and efficiencies include: (1) Percentage reduction in the time to develop combat plans (goal is 35 percent reduction); (2) Percentage increase in the ability to Monitor execution, assess effects, and adapt (goal is 25 percent); (3) Percentage increase to track execution at allowing lower echelon commanders to</p>	0.950	0.975	0.000	

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B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>provide task status, reporting vertically through the C4ISR architecture (goal is 90 percent). (4) Percentage increase in the ability to support Military Operations in Urban Terrain (MOUT) through movement planning tools that consider man-made obstacles and infrastructure and total situational awareness through the sharing of subordinate unit and sister unit plans (goal is 20 percent). This is a two year effort with the completed package delivery within FBCB2/Joint Battle Command Platform (JBCP) software baseline and installed on all platforms for SoftWare Blocking (SWB) 4 (expected to be 44,000 platforms). TTI accelerates the transition of this capability by two years.</p> <p><i>FY 2008 Accomplishments:</i> The following tasks were completed or initiated: 1) Port baseline software to Linux; 2) Performed collaboration network bandwidth testing; 3) Determined and prioritized the core set of requirements with TRADOC Capabilities Manager (TCM) that exist in CAPES and that should be transitioned into FBCB2; 4) Began integrating high priority capabilities into JBCP, including movement planning, attrition modeling, Course of Action (COA) sketch, wargaming and rehearsal; 5) FY 2008 deliverables included: Requirements documentation, Network and bandwidth test results, Linux porting results, design documentation, and source code for high priority capabilities.</p> <p><i>FY 2009 Plans:</i> Complete integration of high priority items, and integrate lower required capabilities identified by the TCM. Perform integration testing, and deliver software into the FBCB2/JBCP software baseline. Deliverables for FY 2009 include: source code for all completed capabilities, test plan documentation, user documentation, test results and release notes, and final integrated product.</p>				
<p>Efficient XML (DISA)</p> <p>Efficient Extensible Markup Language (XML) is a commercial off-the-shelf product that optimizes open web standards and web services so they can be used in environments with limited bandwidth, processing power, and battery life. Efficient XML provides a single, common, interoperable Network-Centric web format for sharing information across the DoD enterprise from the top decision makers, command-centers and Command and Control (C2) systems down to the individual aircraft, ships, vehicles and foot soldiers operating in harsh environments with limited resources. It provides a low-cost software solution</p>	0.241	0.984	0.913	

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APPROPRIATION/BUDGET ACTIVITY 0400 - Research, Development, Test & Evaluation, Defense-Wide/BA 3 - Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603826D8Z Quick Reactions Special Projects (QRSP)		PROJECT NUMBER P829	
B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>for bandwidth expansion and enables the DoD to use inexpensive, web technologies in place of expensive proprietary technologies.</p> <p>Efficiencies/outputs: Efficient XML dramatically reduces the bandwidth required by Net-Centric web technologies (XML, web services, service-oriented architectures (SOA)) and increases their speed by up to 100-400 times. This optimizes performance across the enterprise and extends the reach of Net-Centric Operations to platforms with limited bandwidth, memory, processing power and/or battery-life, such as tactical military platforms, PDAs and smart-phones.</p> <p><i>FY 2008 Accomplishments:</i> This project demonstrated three prototypes integrating eXML into the Net-Centric Command Capabilities (NECC) environments that will serve as benchmarking tools for future testing. The prototypes: a) exchanged basic Service Oriented Architecture data using XML-based messaging; b) exchanged data using a publish and subscribe data exchange pattern with XML and; c) addressed special issues associated with Disadvantaged Intermittent Low Bandwidth users.</p> <p><i>FY 2009 Plans:</i> This project will incorporate the eXML prototypes into the NECC Federated Development and Certification Environment (FDCE) and integrate them into NECC Capability Modules (CMs). Specific integration plans will be developed for each CM and coordinated wit the CM delivery schedule. The specific eXML capability delivery schedules will be created so as to minimize critical dependencies between eXML-specific tasks and other tasks within the NECC CM development schedules.</p> <p><i>FY 2010 Plans:</i> This project will incorporate the eXML prototypes into the NECC Federated Development and Certification Environment (FDCE) and integrate them into NECC Capability Modules (CMs). Specific integration plans will be developed for each CM and coordinated wit the CM delivery schedule. The specific eXML capability delivery schedules will be created so as to minimize critical dependencies between eXML-specific tasks and other tasks within the NECC CM development schedules.</p>				
Electronic Image Intensifier for Pilotage (Army)	3.970	2.750	2.174	

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<p>This project will integrate Electronic Image Intensifier (EI2) technology into a lightweight sensor for the Apache Modernized-Pilot's Night Vision System (M-PNVS). Two form-fit, function and flight ready EI2 prototypes will be developed, built, and delivered to PM Apache for aircraft qualification and users evaluation flights. The EI2 camera will provide performance that is equal to or greater than the current aviator's night vision goggles and at the same time allow for image fusion with the second generation Forward Looking Infrared (FLIR) on the Apache helicopter.</p> <p>Program Outputs and Efficiencies: meet pilotage requirements for dynamic motion, resolution, and contrast through improved readout electronics and high definition format (1920 x 1080); exit criteria to be met include Aviator's Night Vision Imaging System (ANVIS) performance and \$35 thousand per camera; two pre-production prototype cameras delivered for operational flight testing in FY 2010. TTI funding accelerates the transition of this capability by two to three years.</p> <p><i>FY 2008 Accomplishments:</i> This project completed designed and modified 1280 x 1024 read-out integrated circuit (ROIC) and defined 1920 x 1080 high definition (HD) format requirements.</p> <p><i>FY 2009 Plans:</i> This project will complete design, fabrication, and test of 1920 x 1080 ROIC and camera electronics.</p> <p><i>FY 2010 Plans:</i> This project will fabricate two prototypes; conduct reliability and environmental testing; conduct engineering flight testing; integrate into Apache aircraft; complete aircraft qualifications and operational flight testing.</p>				
<p>Fuel Cell Powered Long Endurance Expendable Unmanned Aircraft System (Navy)</p> <p>The Navy and Special Forces have counterterrorism technology requirements that include an over the horizon (OTH) intelligence, surveillance and reconnaissance (ISR) capability using small unmanned aerial systems (UAS)s. Battery powered UASs, although inherently stealthy and safer to operate in most environments, lack the necessary endurance required for SOF/ISR operations and because of power and</p>	1.450	0.000	2.065	

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<p>weight issues, have low grade electro-optical (EO) cameras. Currently, there is no existing UAS that can meet the needs and requirements. This technology gap prevents current (classified) SOF war plans from being executed. This project will mitigate the problem by completing the development and demonstration of a small, expendable, long endurance, fuel cell powered UAS (the XFC) with a real time high resolution electro-optical/infrared (EO/IR) payload.</p> <p><i>FY 2008 Accomplishments:</i> This project demonstrated a fully integrated and fully autonomous fuel cell system as the energy source for propelling a UAS (the XFC) and its high resolution electro-optical payload.</p> <p><i>FY 2010 Plans:</i> Efforts will result in the delivery of two-four XFC UAS with a ground station and an end to end test of autonomous flight with linkages to a surfaced submarine or a land vehicle to demonstrate industry readiness by third quarter of FY 2010. Planned transition to Navy production is scheduled to start in FY 2010.</p>				
<p>Improved Heating Technology for the Unitized Group Ration - Express (Army)</p> <p>The Improved Heating Technology (IHT) project addresses a critical need for non-hydrogen producing chemical heating technology for the Unitized Group Ration Express (UGR-E) Military group self heating meal application that does not produce hydrogen as a by-product of the heating process. The Primary goal of the IHT TTI project is to accelerate transition of new heater technology into an on-going UGR-E procurement that eliminates operational, transport, and storage restrictions attributed to hydrogen by-product of the current heater and thereby foster potential commercial applications and expanded industrial base. Additional benefits that may be realized through the IHT initiative include additional sources of supply beyond the current sole source, and improved performance, quality, and cost. Alternative ration heating technologies to be considered include an exothermic air-activated aluminum/zinc/nickel heater, a blended phosphorous pentoxide (P2O5) and calcium oxide (CaO) anhydrous heater, and an enhanced Mg-Fe heater that couples manganese dioxide in the heater matrix.</p>	0.652	0.712	0.000	

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<p>Program Outputs and Efficiencies: 1) Raise the temperature of the shelf stable polymeric food trays from 40 to 140 F in less than 45 minutes; 2) Weigh less than 500 grams per heater with a unit cost less than 3 dollars and pose no operational, storage, transport, or disposal restrictions; 3) Provide a drop-in product replacement for existing UGR-E heater product and enable an immediate transition of non-hydrogen heater technology for full rate production by Defense Supply Center Philadelphia (DSCP) in FY 2010.</p> <p><i>FY 2008 Accomplishments:</i> This project supported: 1) Rapid transition of improved heating technology from Small Business Innovation Research (SBIR) and Broad Agency Announcement (BAA) contracts; 2) Fabricated and assembled prototypes using scaleable manufacturing processes evaluating them against the current heater requirements for performance, safety, weight/volume, shelf-stability, manufacturability, and cost factors.</p> <p><i>FY 2009 Plans:</i> This project integrates heaters within the UGR-E assembly and test in an operational environment to assess reliability, durability, and user acceptance. It will complete performance specifications and transition to DSCP for direct, rapid implementation to the target UGR-E and commercial applications.</p>				
<p>Strategic Initiative on Innovation and Technology Transition</p> <p>This is a special project of the Director, Defense Research and Engineering (DDR&E) to support an AT&L initiative to create new pathways for DoD to find and access innovation and technology from the global marketplace, and accelerate its movement to the Warfighter.</p> <p>Program Outputs and Efficiencies: The Strategic Initiative on Innovation and Technology Transition team will provide required analyses of transition-related military needs, development of alternative solutions to satisfy these needs, and assessment of options to select the most effective solution for finding, accessing and harvesting innovation into a fielded capability.</p>	0.265	0.000	0.000	

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<p><i>FY 2008 Accomplishments:</i> This project reviewed and analyzed existing mechanisms for finding, accessing and harnessing non-traditional sources of technology/innovation to support capability gaps and shortfalls. In a White Paper, stated the problems and recommended new approaches to reach out and access non-traditional sources of innovation and technology that might be adopted by the Department. Facilitated the development of processes and partnerships that highlighted the need for a more robust, agile and innovative environment in which to develop and accelerate the delivery of capabilities to the warfighter. Initiated actions to support AT&L's follow-on guidance. Prepared a draft strategic communications plan.</p>				
<p>Joint Service General Purpose Mask Filter End-of-Service-Life Indicator (Army)</p> <p>An end-of-service-life indicator (ESLI) has been developed for chemical, biological radiological, nuclear (CBRN) protective mask filters that will alert the user to exchange the filter following exposure to acid-gas chemical warfare agents (CWAs). The technology to be transitioned consists of thin colorimetric indicator films coated with pH sensitive dyes and reagents that target common functional groups and chemical properties of the major classes of blood agents and select Toxic Industrial Chemicals (TICs). The approach is to place the ESLI along the inside wall of the filter in contact with the carbon bed so it can react with the passing agent wave front to produce a color change, thereby alerting the user to replace the filter well before its gas-life capacity is depleted.</p> <p>Program Outputs and Efficiencies: The Joint Service General Purpose Mask (JSGPM) CBRN filter housing will be equipped with a transparent plastic window to view the indicator response. The ESLI will be designed to provide a visual signal when approximately 20 to 60 percent of the filter's service life capacity is expired, depending on the target agent. The ESLI technology will be transitioned to the M50 JSGPM acquisition program as a spiral upgrade (product improvement) to the current primary CBRN filter. TTI funding accelerates this transition by one year.</p> <p><i>FY 2008 Accomplishments:</i> This project completed JSGPM ESLI filter design and begin prototype fabrication.</p>	0.800	0.860	0.380	

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<p><i>FY 2009 Plans:</i> This project will hold a Critical Design Review, complete the fabrication of final ESLI filter prototypes, and begin final prototype test and evaluation.</p> <p><i>FY 2010 Plans:</i> This project will complete test and evaluation, hold Transition Readiness Evaluation review, complete Engineering Change Proposal, and submit for joint service approval.</p>				
<p>Medium Caliber Cartridge Improvements using Micro Electro-Mechanical Systems and Direct Write Explosive Ink</p> <p>40 mm M433 and M430 cartridges have been in service since the 1950's and 1970's respectively, and are used with the M203 and MK19 by all services. Both use point detonating fuzes with mechanical safe and arm devices which do not reliably detonate on soft impact targets or high graze angles. The objective of this effort is to incorporate a Micro Electro-Mechanical Systems (MEMS)-based Safe and Arm (S&A) device with automated explosive loading technology into current 40mm combat cartridges.</p> <p>Outputs and efficiencies: incorporate impact sensors that will sense initial impact and electronically send a signal to initiate the explosive train for improved lethality and improved reliability on soft targets (from 50 percent to 90 percent), and also significantly reduce the number of duds on the battlefield and training ranges. The MEMS S&A will also require less volume which will allow room for improvements in lethality or other future alternate applications. This Technology Transition Initiative accelerates transition of this technology by approximately three years.</p> <p><i>FY 2008 Accomplishments:</i> This project performed modeling of fuzing and explosive train in a gun launch environment and incorporated MEMS S&A design into fielded system (current cartridge design).</p> <p><i>FY 2009 Plans:</i> This project will build inert demonstration units to verify MEMS survivability of MK19 cycling/firing and conduct laboratory safety evaluation on micro-scale firetrain.</p>	0.750	1.376	3.696	

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<p><i>FY 2010 Plans:</i> This project will initiate verification hardware build and conduct test and evaluation on prototype high explosive cartridges, complete verification hardware build, conduct independent assessment, qualify fuze, and perform evaluation which will result in changes to technical data package.</p>				
<p>Tactically Integrated Sensor (TIS) (Navy)</p> <p>This project was previously titled "Naval Expeditionary Combat Command Tactical Command & Control" in the FY 2009 President's Budget.</p> <p>The Tactically Integrated Sensor project provides the ability to protect the last miles of the Sea Lanes of Communication. The specific objectives of the project are to support US Forces in an area of heightened vulnerability from surface, air and subsurface attack; protect merchant shipping and maritime infrastructure; and quickly assess the extent of the threat for the Naval Coastal Warfare (NCW) Commander.</p> <p>Output of the project will provide an integrated family of surface, air and subsurface sensors for persistent intelligence, surveillance and reconnaissance which is fundamental to the NCW mission. The program completion date is 30 September 2009.</p> <p><i>FY 2008 Accomplishments:</i> This project built: 1) Spiral one NECC Tactical C2 software, modified Regional Maritime Awareness Capability Joint Concept Technology Demonstration baseline software to incorporate unique NCW detection, tracking, and direction of maritime traffic capabilities; 2) Integrated NECC Area of Responsibility tactical sensor data (including surface search radar, Automatic Identification System, Electro Optic/Infra Red, air beacons and acoustic sensors) and communication links into a single integrated commander's combat system; 3) Employed Service Oriented Architecture that facilitates the users to publish and subscribe to other data sources across US Navy and coalition combat and command and control systems and provided Tactical Decision Aids to aid the users in the detection, identification, and interdiction of contacts of interest; and 4) Procured environmentally packaged expeditionary computer systems.</p>	2.767	2.753	0.000	

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<p><i>FY 2009 Plans:</i> This project will; 1) Build spiral two software to process, correlate and de-conflict multiple and dissimilar sensor types data, present as a consolidated combat system picture; 2) Integrate small high speed surface vessel detection and tracking into the combat system; 3) Integrate additional capabilities to detect and track swimmer/diver delivery vehicles, and provide capability to the combat system to detect and track aircraft; and 4) Demonstrate the spiral two hardware and software suite during Seahawk 2009 Anti-Terrorism Force Protection exercise.</p>				
<p>Solid State Laser Ignition (Army)</p> <p>The Solid State Laser Ignition System replaces the primer feed mechanism (PFM) and primers used in the 155 mm M777 family of towed howitzers. The current PFM ignition system is complex and high maintenance with known operational issues due to mechanical jamming of the PFM and premature firing due to primer sensitivity. This solid state laser ignition system increases system safety by eliminating the manufacture, storage, resupply and demilitarization of explosive primers and reduces system costs associated with the logistics and maintenance required with primers and primer feed mechanisms.</p> <p>Outputs and efficiencies: (1) an integrated design for M777 application where major risk areas have been mitigated or managed; (2) hardware availability to verify the design in system tests; and (3) a comprehensive assessment of the technology to support a production decision and an operational evaluation of its readiness for field insertion. This solid state laser ignition effort will yield a system prototype and will accelerate the availability of this technology for fielding by four years.</p> <p><i>FY 2008 Accomplishments:</i> This project: 1) Integrated baseline review (IBR) and system requirement review (SRR) were conducted; 2) Preliminary design and risk mitigation activities initiated; 3) Gun shock and vibration (S&V) and thermal data collected to baseline requirements for laser ignition components; 4) Chamber window surrogates designed and fabricated to evaluate design concepts and window cleaning procedures; 5) Analysis of M777 hardware changes to verify their structural integrity and overall suitability were performed.</p>	1.153	1.376	0.652	

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<p><i>FY 2009 Plans:</i> Preliminary design review (PDR) and critical design review (CDR) will be conducted. Risk mitigation, preliminary design and detail design activities will be completed and an integration concept will be developed from system trades which focus on minimizing the operational impact of converting from a primer based to a solid state laser ignition system on the current M777 family of towed howitzers. Pre-prototype hardware will be fabricated and qualified by subsystem tests. Hazard analyses and safety assessments will be performed in preparation of system test and live fire evaluation.</p> <p><i>FY 2010 Plans:</i> System test readiness review (TRR) will be conducted. Prototype hardware will be fabricated and system test and evaluation will be completed. Improvements to the prototype hardware design will be captured in the solid state laser ignition Technical Data Package. Manufacturing and technology readiness assessments will be performed. Final prototype hardware for limited user testing (LUT) will be delivered in advance of the production decision.</p>				
<p>Tactical Idle Reduction Equipment for Heavy Tactical Vehicles (Army)</p> <p>This project develops and equips a suitable auxiliary power unit (APU) and auxiliary environmental control unit onto the next-generation M915 and family of next-generation long haul Heavy Tactical Vehicles (HTV's). Excessive fuel consumption for this fleet of vehicles has been attributed to significant idling, during which the vehicle is parked but the main engine is left running to meet power and energy demands. The idle reduction equipment developed under this effort would enable M915 operators to disable the main engine while maintaining power and environmental control capabilities, thereby conserving 66 percent of the fuel currently being consumed by the fleet during parked operations.</p> <p>Outputs and efficiencies: 1) Fabrication of an APU and integration onto the M915 platform; 2) Demonstration of power quality utility class 2C conformance per Department of Defense Military-Standard-1332B, protective device functionality verification, and validated environmental control per American Society of Heating Refrigerating and Air-Conditioning Standard 37. Additionally, operational testing of integrated idle reduction equipment will be performed to demonstrate that they can be integrated with the M915 to fit its maintenance and operational schedule without any adverse effects. These tests</p>	1.730	1.950	0.000	

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<p>include demonstration of maintenance ratio less than 0.0025, demonstrated reliability comparable to the M915 (mean time between hardware mission failure of 8,600 miles), and conformance to survivability metrics for shock, vibration, sand, water-immersion, hot/cold environmental, altitude testing. TTI funding accelerates the transition of this capability three years.</p> <p><i>FY 2008 Accomplishments:</i> This project conducted power and energy assessments of the fielded fleet of long haul trucks and developed and demonstrate stand-alone prototypes of the auxiliary power unit (APU) and auxiliary environmental control unit.</p> <p><i>FY 2009 Plans:</i> FY09 plans are to: 1) accomplish test and evaluation on stand-alone auxiliary power unit (APU) and auxiliary environmental control unit prototypes; 2) Implement any needed engineering changes to the prototypes discovered during developmental test or the power assessment, as appropriate; 3) Down-select to a single idle reduction equipment supplier, and integrate prototypes onto M915 platform; and 4) Perform advanced technology demonstration and maintenance demonstration of fully-integrated platform for Program Manager (PM) HTV.</p>				
<p>Weapons Decision Support System (Navy)</p> <p>Weapons Decision Support System (WDSS) provides intelligent agent decision support for weapon availability, strike up time, weapons choices and weapon inventory Underway Replenishment (UNREP) and offload planning onboard carriers. WDSS system manages weapons current stowage location, weapons peculiar attributes, breakout and build support requirements, status of the carrier's weapon elevators, potential strike-up path hindrances, alternate weapons availability, and breakout to delivery time forecasting. WDSS employs expert systems and intelligent agents to collect, interpret, and process the information into a knowledge base which can be used to support and automate the decision making processes associated with weapons planning. WDSS will function as a component of Aviation Weapons Information Management System (AWIMS) that will interface with or receive data from other systems such as, Load Plan generator, Ordnance Information System (OIS), Magazine Arrangement Planning Aid</p>	0.620	0.688	0.000	

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<p>Internet (MAPA-I), and other related systems to provide weapon system attributes during planning and execution of the aircraft load plan.</p> <p>Outputs and efficiencies: WDSS shortens the time to plan initial ship load-outs and fulfill replenishment requisitions by 50 percent and improves availability of weapons asset availability information following replenishment by 30 percent. WDSS increases survivability; less bombs are required to be staged on flight deck (stage only two events in advance vice three-five events in advance). Higher mission-capable sortie rate, additional 18-25 sorties from faster planning, mission flexibility and tracking under WDSS. TTI funding accelerates the transition of this capability by two years.</p> <p><i>FY 2008 Accomplishments:</i> Pilot systems were upgraded and integrated with Aviation Data Management Control system (ADMACS). Weapons planning and operation intelligent agents modeling and rules were completed.</p> <p><i>FY 2009 Plans:</i> Planned integration testing with the ADMACS architecture and AWIMS integration testing. Plan to incorporate WDSS into ADMACS Block 2 for shipboard testing and fleet delivery under ADMACS Block 2.</p>				
<p>XM312 .50 Caliberr Lightweight Machine Gun (SOCOM)</p> <p>The XM312 is a 34 lb., .50 caliber machine gun that fires open bolt and out of battery with an internal recoil buffer. The XM312 system supports the VC Joint Chiefs of Staff memo, Most Pressing Military Issues Approval. Joint Force Projection Issues are addressed given this new capability allows SOF to man-carry a lightweight, lethal .50 caliber weapon to locations otherwise inaccessible to current forces. Joint Force Sustainment Issues are addressed by minimizing ammunition consumption as a more controlled weapon facilitates full target engagement with fewer rounds. The XM312 is capable of being mounted on any land, sea, or air platform due to its size, reduced weight, and recoil. This addresses interoperability within the Joint Capability Areas. The XM312 will be procured by USSOCOM and integrated into the Family of Special Operations Vehicles, specifically the RG-31 and RG-33 Medium Mine Vehicles as well as USSOCOM's Light Tactical Vehicles.</p>	1.730	1.147	0.000	

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<p>Outputs and efficiencies: 1) 66 percent less recoil force than the M2 MG, which contributes to better accuracy and more weapon controllability; 2) lighter weight (50 percent less weight than the M2 machine gun: less than 53 lbs verse 128lbs for the M2); increased accuracy and controllability, which contribute directly to reduced ammunition consumption and increased combat effectiveness/lethality, and soldier survivability. USSOCOM sees the XM312 as a replacement for all M2's in its inventory and expanding the capability the XM312 provides to all units and mobility platforms.</p> <p><i>FY 2008 Accomplishments:</i> This project: 1) Designed and completed the integration of a new M9 link feed system into the XM312; 2) Conducted Contractor Verification Test (CVT) with current prototype hardware; 3) Produced three Engineering Test Units to further support reliability testing, Technology Readiness Assessments, as well as conducted a SOF Limited User Test (LUT) in order to formalize the Capabilities Development Document (CDD); and 4) Attained a successful Milestone-B decision.</p> <p><i>FY 2009 Plans:</i> Planned completion of development and preparations for Low Rate Initial Production.</p>				
<p>Battlespace Terrain and Reasoning Awareness Battle Command (BTRA-BC) (Army)</p> <p>BTRA-BC transitions terrain, atmospheric and weather analytic Tactical Decision Aids (TDAs) in support of Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR). TDA software for transition operates at two levels: 1) TDAs that operate over large data sets to create actionable information of the effects of the terrain, atmosphere and weather on units, tactics, ground and air platforms, systems and sensors and the soldier and 2) TDAs that perform mission and task level analysis in support of the Military Decision Making Process (MDMP), planning, Course of Action Analysis (COA), asset management and execution monitoring.</p> <p>Specific TDAs developing actionable information address topics of: 1) Observation and Fields of Fire, Cover and electro-optical concealment, Obstacles, Key Terrain and Avenues of Approach, 2) platform mobility and unit maneuver incorporating weather effects, 3) interactive graphs representing maneuver potential and battlefield geometry, 4) Tactical Spatial Objects for varying military tasks, 5)</p>	0.000	1.200	0.000	

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<p>Infra-red, Acoustic and Seismic sensor performance, 6) atmospheric and weather effects on UAV mobility and performance. TDAs addressing MDMP activities support: 1) Interactive, MapQuest-like mission constrained ground and air platform routing, 2) ISR asset management, 3) ground and air asset synchronization and 4) battlefield effects. All products are designed for visualization and input to other automated Battlefield Operating Systems (BOSs).</p> <p>BTRA-BC transitions a geo-Battle Management Language (geoBML) supporting semantic and syntactic interoperability between Army and Joint systems via the Joint Consultation, Command and Control Information Exchange Data Model (JC3IEDM) required by Army and USMC systems.. Each year, BTRA-BC will transition various data analysis and decision support tools to: 1) National Geospatial-Intelligence Agency's (NGA) Commercial Joint Mapping Toolkit (CJMTK), supporting 207 approved Joint Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) programs, 2) the Digital Topographic Support System (DTSS) supporting the Current force of the Army at Division and Brigade Combat Teams via CJMTK, 3) Distributed Common Ground System Army via CJMTK and 4) the Army's Future Combat System via CJMTK.</p> <p><i>FY 2008 Accomplishments:</i> This project completed or initiated the following tasks: 1) Common, Joint Battle Command software tools and services ensuring consistent, actionable information from terrain and weather analysis, enabling shared awareness, empowering predictive analysis and providing a common geo-environmental basis to the Common Operating Picture (COP) or Common Relevant Operating Picture (CROP) providing an increase of 3 times in the number of Courses of Action (ground maneuver forces) that can be considered during mission planning and predictive tactical advantages across both unfamiliar and familiar terrains improving force, sensor and asset management and synchronization given terrain and weather effects; 2) Initial capability to share actionable, C4ISR relevant, geospatial information with Army and Coalition partners via the extension of the Joint C3 Information Exchange Data Model (JC3IEDM); and 3) Defense Information Systems Agency (DISA)/Global Information Grid (GIG) compliant analytic software services.</p> <p>Efficiencies:</p>				

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<p>1) Software reuse: Transitions via NGA's Commercial Joint Mapping Toolkit (CJMTK) make the software tools available to over 207 approved Joint C4ISR programs and operational on military systems using either Windows, Solaris (Unix) or Linux operating systems.</p> <p>2) Common integration and use of tools and products. CJMTK will provide, for the 1st time, reference implementation guidance regarding software, services and resulting product interaction using the JC3IEDM.</p> <p>3) Single approach to interoperability across Joint and Coalition Systems for geospatial Battle Command Information.</p> <p>4) Early risk mitigation. Accelerated transition allows the Army's Future Combat System and Distributed Common Ground System-Army (DCGS-A) and Digital Topographic Support System (DTSS) to evaluate and adopt design methods, procedures and processes in early spirals of development.</p> <p><i>FY 2009 Plans:</i> Planned tasks in FY09 are to transition six (6) decision support tools, aggregated services and data/information models for incorporation in the Army mandated Joint C3 Information Exchange Data Model (JC3IEDM).</p> <p>Outcomes: (1) Common, Joint Battle Command software tools and services ensuring consistent, actionable information from terrain and weather analysis, enabling shared awareness, empowering predictive analysis and providing a common geo-environmental basis to the Common Operating Picture (COP) or Common Relevant Operating Picture (CROP); (2) Extended capability to share actionable, C4ISR relevant, geospatial and weather information with Army and Coalition partners via the extension of the Joint C3 Information Exchange Data Model (JC3IEDM); and (3) DISA compliant analytic software services.</p>				
<p>Precision Fires Image Software Suite Handheld Capability (Navy)</p> <p>Currently Overseas Contingency Operations (OCO) missions on the ground are planned using traditional means and require dismounted operators, (conventional and Special Operations Forces), who do not carry laptop computers. The mission set is currently supported by paper. The objective of this program is to integrate Battlespace Awareness (Mission Planning, Force Protection, Direct Action, etc.) capability on a</p>	0.000	1.413	1.522	

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<p>Windows CE/mobile handheld computer by building upon already proven and deployed technology. The availability of these software tools on a handheld computer will immediately advance warfighter capabilities by enhancing situational awareness, precision targeting, and rapid employment at the tactical level.</p> <p>Program Outputs and Efficiencies: This program will generate and transition a software suite that provides image, video, and geographical capabilities on the Army's Pocket Sized Forward Entry Devices (PFED) and compatible Special Operations Forces Windows CE/mobile handheld computers. These forward operating Battlespace Awareness applications will be built around the previously transitioned and deployed Precision Fires Image (PFI), which is a National Geospatial-Intelligence Agency (NGA) validated, CENTCOM approved, image based targeting tool for coordinate-seeking weapons. Integration to the handheld computer will be advantageous in achieving advanced mission capability with less weight, space, and provide shorter operational readiness delays. The TTI funding will accelerate the acquisition and integration of this handheld software capability by two to three years.</p> <p><i>FY 2009 Plans:</i> The first year will focus on: 1) Gridded Reference Graphics (GRG's), Collateral Damage Estimation (CDE); 2) Importing route capability; and 3) Inclusion of the Combatant Commander's No Strike List. This will provide: 1) The capability to use Windows XP/Vista computers to generate PFI's from any image (i.e. commercial satellite, global hawk, national systems) that has the meta-data required to support coordinates so that missions can be run using a variety of images; 2) Provide basic graphics and drawing capability to any 3rd party application by generation of a generic shared object module on the CE/Mobile devices; and 3) Work directly with dismounted users (Special Operations and Conventional Forces) during a series of events and before deployment to inject advanced capability and Tactics Techniques and Procedures (TTP's) designed to save lives and successfully prosecute Overseas Contingency Operations (OCO) missions. Technology will be transitioned on a six-month cycle with enhancements integrated into the PFED baseline based on blocking cycles and integrate with an initial Program of Instruction (POI) at each services schoolhouse</p>				

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<p><i>FY 2010 Plans:</i> The second year will focus on Battlespace Awareness directed at specific mission sets, which include Direct Action (DA), Leadership Interdiction Operations (LIO), Mobility and Force Protection (FP). Work in a six month transition cycle, testing capability with scheduled exercises, and working with the instructors and schoolhouses.</p>				
<p>Magneto-Rheological (MR) Fluid Suspension System for Stryker (Army)</p> <p>The objective of the project is the direct replacement of the Stryker Family of Vehicles (FoV) passive suspension system with the Magneto-Rheological (MR) Fluid Semiactive Suspension System during the Stryker Modernization Program (S-MOD). The MR Suspension System significantly reduces shock and vibration levels, improves vehicle mobility and handling, and improves chassis stability, thereby improving crew responsiveness during target acquisition and engagement as well as improving firing accuracy for the Mobile Gun System (MGS). The TTI effort will accelerate the integration activity to the Stryker fleet by 8-12 months.</p> <p>Program Outputs and Efficiencies: The MR Suspension technology is low risk and will provide outstanding vehicle performance, including cross-country speed improvements up to 72 percent, vehicle hull shock and vibration reductions up to 60 percent, a 30 percent improvement in vehicle handling stability, and greater than 50 percent improvement in firing accuracy. The MR suspension improvement in ride performance will also reduce operator fatigue, thereby increasing crew sustainment and operational effectiveness.</p> <p><i>FY 2009 Plans:</i> 1) Tank-automotive and Armaments Command (TACOM) Life Cycle Management Command (LCMC) Assessments, Test Plans, and Reports: procure contracts, solicit cost estimates and test plans from government testing facilities and generate reports of each of the following testing phases. 2) Design Iteration and Analysis: augment the Wheeled Vehicle Power and Mobility Advanced Technology Objective – Development (ATO-D) for system/subsystem design iterations and analysis. 3) Subcomponent Endurance Testing: perform a design iteration of the current damper hardware and develop subcomponents of the newly iterated design using the predetermined Stryker Mission Profile provided by the Program Management Office for the Stryker Brigade Combat Team (PMO SBCT). 4)</p>	0.000	2.283	1.957	

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<p>Component Endurance and Environmental Testing: perform endurance testing of the newly iterated MR damper design using the predetermined Stryker Mission Profile provided by PMO SBCT at both ambient temperature and also in a cold chamber to determine the durability of the system. 5) Full Vehicle Endurance Simulation Testing: develop and install a full vehicle set of MR dampers for a Stryker vehicle, which will be provided by PMO SBCT, for the purpose of endurance testing the vehicle</p> <p><i>FY 2010 Plans:</i> Perform a full vehicle Reliability, Accountability, and Maintainability (RAM) test using the Stryker Mission Profile provided by PMO SBCT at Yuma Proving Grounds (YPG).</p>				
<p>Polymer Light Emitting Diode (PLED) Identification of Friend or Foe (SOCOM)</p> <p>United States Special Operations Command users currently lack adequate, mutually recognizable, and intuitive IFF systems that are accepted and interpreted across the command. An improved IFF system is required to mitigate potential friendly fire incidents within Special Operations Forces (SOF). The objective of this project is implementation of a next generation IFF system incorporating PLED technology for laser interrogated response visible only to Generation III Night Vision Goggles (NVGs). This Technology Transition Initiative (TTI) will accelerate the program by 12-18 months. In addition to programmatic acceleration, TTI funding will enable acceleration in manufacturing and production of PLED emitters.</p> <p>Program Outputs and Efficiencies: The Program will deliver significantly enhanced IFF capability providing an IFF emitter visible to GEN III NVGs operating in the near-IR spectrum and initiated only by modulated military laser interrogators (AN/PEQ-5). The effort will focus on developing brighter PLED material with extended emission range, improving efficiency of the system through integration of flat-cell batteries, and development of a streamlined, flexible form-factor that meets user requirements.</p> <p><i>FY 2009 Plans:</i> The project will develop and deliver: 1) Spiral 1 PLED IFF Tag prototypes (100 units); 2) Limited user assessment of the Spiral 1 prototypes; and 3) IFF Annex to the Special Operations Personal Equipment Advanced Requirements (SPEAR) Operational Requirement Document (ORD).</p>	0.000	0.978	0.304	

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<p><i>FY 2010 Plans:</i> This project will develop and produce 200 Spiral 2 Prototype IFF PLED Tags based on user defined modifications generated during the FY 2009 user evaluation and requirements development process and conduct an Operational Test to support a Military Sealift Command decision and potential initial operating capability (IOC) in June 2010</p>				
<p>155mm M107E1 1M Training Projectile (Army)</p> <p>The objective of this program is to provide artillerymen with a safer, combat-representative, less expensive, 155mm training round that would be Insensitive Munitions (IM) compliant. This new training round replaces the 155mm M107 high explosive (HE) wartime reserve projectile that is currently used with one that has the look, feel and flight characteristics of the wartime M795 HE projectile. The plan including reutilization of M483 shell bodies (from the M483 demilitarized (DEMIL) effort driven by End-of-Life and Cluster Munition Elimination policy issues) and utilize the IMX-101 Extremely Insensitive Detonating Substance (EIDS) explosive formulation (a non-TNT formulation leveraged under an ongoing FY2008 TTI project) to produce the M107E1 projectile. TTI funding accelerates the transition of this project by one year.</p> <p>Program Outputs and Efficiencies: 1) Reduces the Hazard Classification (HC) of training projectiles from the current HC of 1.1 up to an HC 1.6; 2) Alleviates logistics chain strain by reducing the safe distance from 1250 to 172 feet per 10,000 lbs; 3) Enhances training by more closely replicating the operational capability; and 4) Improves soldier safety during training.</p> <p><i>FY 2009 Plans:</i> In FY09 this project will baseline the final design and perform qualification testing which would support a Milestone C Type Classification and load and test the projectiles according to Hazard Classification testing requirements given in TB700-2 (the IM requirements in MIL STD 2105C).</p>	0.000	2.065	0.000	
Transition Initiatives	0.000	1.375	15.698	

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<p>The Annual Call for Technology Transition Initiative Proposals will be released in the January/February for response by April, and OSD review, prioritization and selection during the June/July timeframe. A listing of initiatives under review for selection by OSD can be provided to congressional staff members during the budget review.</p> <p><i>FY 2009 Plans:</i> Selection of one additional project for execution in FY 2009 is pending from among competing projects, but priority at the time of this submission is the USN Jamming Tactical Air-Launched Decoy (JTALD) Expendable Electronic Attack Payload, which increases aircraft and weapon survivability within the jamming corridor it creates.</p> <p><i>FY 2010 Plans:</i> Transition initiatives validated but pending final review and selection for FY 2010 execution include the following projects: 1) Height-of-Burst (HOB) Sensor for Hellfire P++ (improved lethality); 2) Next Generation - HELLFIRE II Captive Carry Health Monitor (NG-CCHM) (reduces Mx costs; supports increased OPTEMPO); and 3) Secure Cross-Domain Mission Planning using the Trusted Services Engine (TSE) (increases sortie generation rate and the effectiveness of those sorties). These projects will be supplemented by the FY 2010 Annual Call for TTI Proposals. Approximately 48 percent of FY2010 program funds are expected to be dedicated to funding tails from prior year projects, providing the remaining approximate 54 percent to support FY 2010 Transition Initiative selections. A listing of initiatives under review for selection by OSD can be provided to congressional staff members.</p>				
C. Other Program Funding Summary (\$ in Millions) N/A				
D. Acquisition Strategy N/A				
E. Performance Metrics QRF/RRF: Program completion and success will be monitored against program schedule and deliverable stated in the proposals.				

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<p>TTI: In FY 2008, initiated the new start of 14 projects and concluded the activities on many continuing projects with the result of 9 technologies transitioning to the warfighter.</p> <p>In FY 2009, initiate the new start of 5 projects and conclude the activities on many continuing projects with the result of at least 13 technologies transitioning to the warfighter.</p> <p>In FY 2010, initiate the new start of 12 projects per year and conclude the activities on many continuing projects with the results of 11 technologies per year transitioning to the warfighter.</p> <p>RRF: In FY 2008/FY 2009/FY 2010 RRF investment decisions are made during the execution years in response to combatant commander requirements and new threats/new opportunities.</p>		

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