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Exhibit R-2, RDT&E BUDGET ITEM JUSTIFICATION					Date: February 2005			
APPROPRIATION/BUDGET ACTIVITY Defense Wide RDT&E (0400) Budget Activity Five					R-1 ITEM NOMENCLATURE Defense Acquisition Challenge Program (DACP) Program, PE 0604051D8Z			
COST (In Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Program Element (PE) Cost	0.000*	25.116	28.975	29.238	29.619	30.400	31.111	31.791

*FY 2004 funding for this program was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Authorized by Title 10, Section 2395b, the Defense Acquisition Challenge Program (DACP) provides increased opportunities to insert innovative and cost-saving technologies into acquisition programs of the Department of Defense. DACP funds the test and evaluation of technologies and products that have the potential to improve performance, affordability, manufacturability, or operational capability of current acquisition programs at the component, subcomponent, or system level.

In FY 2003/2004, DACP was a sub element in the Quick Reaction Special Projects Program (Program Element 0603826D8Z). In FY 2005, the Defense Appropriation Act directed the Department of Defense to transfer the Defense Acquisition Challenge Program (DACP) from Budget Activity 3 to Budget Activity 5. The DACP for FY 2005-2011 will execute under Program Element 0604051D8Z under Budget Activity 5.

As a result of the Defense Acquisition Challenge Program’s rapid establishment in mid-FY 2003, the Comparative Testing Office and its Foreign Comparative Testing (FCT) Program were selected by OUSD(AT&L) as the infrastructure to support the DACP pilot business model. Currently, U.S. Special Forces Command, U.S. Army, U.S. Marine Corp, and the Navy’s Naval Sea Systems Command, Naval Air Systems Command, and Naval Space and Naval Warfare Systems Command are supporting DACP with the current FCT service infrastructure. The U.S. Air Force is supporting DACP through Secretary of the Air Force for Acquisition (SAF/AQ).

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B. Program Change Summary

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget:	0.000*	0.000	0.000	0.000
Current FY 2006 President's Budget Submission:	0.000	25.116	28.975	29.238
Adjustments to Appropriated Value:	0.000	+25.116	+28.975	+29.238
Congressional Program Reductions:		-0.597		
Congressional Rescissions:				
Congressional Increases:		+25.713		
Reprogrammings:				
SBIR/STTR Transfers:				
Other Program Adjustments:			+28.975	+29.238

* Note in FY 2004 DACP was funded as a sub-element under the QRSP Program Element 0603826D8Z

C. (U) OTHER PROGRAM FUNDING Not Applicable.

D. (U) EXECUTION Not Applicable.

E. (U) PERFORMANCE METRICS

For FY 2005-2011, initiate the new start of approximately 15-20 projects per year.

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Exhibit R-2a RDT&E Budget Item Justification					Date: February 2005			
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Budget Activity Five					Program, PE 0604051D8Z			
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Proposal Solicitation Process

The DACP process is a two-phased annual process. During Phase I, interested parties, within and outside the DOD, are invited through a Broad Area Announcement (BAA) to submit summary proposals. Summary proposals are evaluated and prioritized based on merit and their potential to benefit a DoD Program of Record (POR). In Phase II, candidate summary proposals are matched to the POR that has the potential to benefit from the proposed technology. POR Program managers, in collaboration with the weapon prime where applicable, evaluate and either “accept” or “reject” the proposed technology. A “reject” is defined as the POR has determined that the technology can not benefit the POR. An “accept” is defined as the POR determines the technology has potential benefit and wishes to compete for funding. The POR then develops a final proposal to compete for DACP funding to test and evaluate the proposed technology. The final proposal contains a brief description of the issue and how the proposed technology resolves the issue, test and evaluation strategy, and procurement and transition strategy if the technology meets the PORs requirements. Final proposals are submitted into OSD DACP by the POR where the proposals are evaluated and prioritized, and selected for funding by the OSD DACP Program Manager.

The DACP pilot business model leverages off the successful FCT personnel and business processes, where possible, except OSD DACP will issue a Broad Agency Announcement (BAA) annually inviting interested parties to submit summary proposals.

Results of FY 2005 BAA Solicitation

The FY 2005 cycle began with a BAA release in mid-February 2004. More than 580 summary proposals were submitted by industry and government representatives in response to the BAA. Approximately 200 summary proposals were rejected during the administrative review for lack of proper documentation. Admin Review was completed in mid-July. Proposal Match to Program of Record was completed in September 2004. Final selection of 15 FY 2005 DACP new start projects was made in January 2005.

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(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Enhanced Gunfire Detection System	USSOCOM	0.000*	0.115	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project will evaluate system enhancements (i.e., addition of sensors and processors) which have the potential to significantly improve the accuracy of the Gunfire Detection System (GDS) and locate a sniper prior to the sniper's first shot. This improved technology will be brought about through the integration of selected sensors (e.g., hyper-spectral imagers, unattended ground sensors, visible micro-sensors, infrared sensors, etc.) in the GDS and through the inclusion of automatic processing software.

Vendor(s): Metravib, France

Program Office of Record: USSOCOM PEO, Special Programs (SP)

FY 2005 Plans: Complete technical testing. Conduct operational testing and user evaluation. Compile test results and prepare documentation in support of a milestone decision. Award contract for production buys. Incorporate plans for a rotary wing version of gunfire detection system for testing in FY 2005-2006. Submit DACP Close-out Report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Enhanced Simulation for Training and Testing	Army	0.000*	0.643	0.497	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

The Enhanced Simulation Capabilities for Testing and Training Program will provide a software architecture that can bring network management to legacy DIS simulations. The DoD community has invested millions of dollars in DIS-based simulations for both the testing and training communities. Currently, however, these simulations cannot be used in large-scale scenarios with real-time requirements. The Conductor platform will enable these large-scale scenarios with real-time requirements simulations and also provide a central integration point with new standards, the central collection of simulation data for analysis and the ability for field units to participate in high quality simulation. By successfully leveraging COTS technology, the Conductor platform will save

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considerable time and money by eliminating rewrites of existing simulations and providing a mission critical solution that is needed by DoD now.

Vendor: Circadence Corp, Colorado
Program Office of Record: Threat Systems Management Office

FY 2005 Plans: Two major tasks will be accomplished. First is the DIS listener that will allow the conductor platform to interact with DIS packets. Second is the driver application that will allow for the control of the DIS listener as well as automated data collection for testing purposes. Both of these efforts are broken into parallel task streams to simultaneously accomplish Graphical User Interface (GUI) design and development, data collection design and implementation, documentation, implementation and test integration.

FY 2006 Plans: Measurement of both network and simulation performance will be accomplished. The simulation will then be run with and without the conductor platform and measurements will be taken to report on data throughput, effective data throughput, network utilization, and network latency. In addition, application-level metrics such as frame rate and responsiveness will be developed to assess the impact on the simulation itself. A report on testing results as well as the development of a set of recommendations, derived from test results of any optimizations that might further improve the overall performance of the system will be generated.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Friction Stir Processing for Virginia Class Submarines	Navy	0.000*	0.689	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is assisting in the transition of a new manufacturing technology into the US Navy's propeller manufacturing infrastructure. In FY 2002, Friction Stir Processing (FSP) showed feasibility to significantly improve the surface condition of Ni Al bronze propeller castings by repairing inherent surface defects while also greatly improving the strength of the processed area. In FY 2003, an aggressive effort was initiated to refine processing parameters and tools for Ni Al bronze castings. This process is continuing, in parallel with the equipment design and manufacturing effort. Because the process is adaptable to the numeric controlled machining process, which is used extensively at the Naval Foundry and Propeller Center to finish the propeller castings, developing a prototype attachment that could both machine the surface of the propeller and repair it, without moving the propeller, will result in time and cost savings.

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Vendor(s): TBD; likely candidates are General Tool Company, Cincinnati OH, and Friction Stir Link, Waukesha, WI who produce similar equipment

Program Office of Record: Virginia Class Submarine Program Office, PMS 450

FY 2005 Plans: Award the design contract for the FSP prototype attachment and prepare detailed specification for manufacturing the prototype unit.

FY 2006 Plans: Build and deliver the FSP attachment to the Naval Foundry and Propeller Center, Philadelphia for acceptance testing and introduction into the propeller manufacturing process.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Integrated Schedule/Process for Global Hawk Spiral Development	Air Force	0.000*	0.414	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

To date neither industry nor Government program offices have developed an effective means of implementing existing integrated scheduling techniques into the spiral development process. This project seeks to provide the Global Hawk program with an integrated schedule to be used daily with schedule risk tools and at all reviews, to optimize program management and reduce future program risk. If successful, this project will provide defense organizations a more robust and disciplined process to use in scheduling spiral development (multiple spirals) programs.

Vendor: Dayton Aerospace, Inc., Dayton, OH
Program Office of Record: Global Hawk Program Office

FY 2005 Plans: Provide recommendations for growth to full program IMS. Incorporate additional Global Hawk lessons learned into report. Complete final report and briefing.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
Miniature – Controlled Receive Pattern Antenna (MCRPA)	Navy	0.000*	0.441	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

The Miniature–Controlled Reception Pattern Antenna (MCRPA) will provide anti-jamming (A/J) GPS capability to the Navy’s platforms that have size and weight restrictions for antenna systems, such as the UH-1Y and AH-1Z helicopters and submarines. The small footprint, integrated antenna electronics, light weight, and low cost of MCRPA all make it a viable solution for the size and weight restrictive platforms than the only other production CRPA available to the Navy today, the GAS-1.

Vendor: Titan Corporations, Greenbelt, Maryland
 Program Office of Record: PEO C4I, PMW/PMA-170 (formerly 156) Navy

FY 2005 Plans: Finalize MCRPA antenna design at conclusion of NAWC Patuxent River antenna testing. Fabricate mechanically ruggedized prototype MCRPA A/J GPS System. This includes antenna assembly and AE. The unit will undergo mechanical and electrical testing before proceeding with fabrication of final deliverable units. Fabricate and test final deliverable MCRPA A/J GPS System units. DACP funding ends in FY 2005, seeking new funding to conduct demonstration of antenna system. If successful, funding will be needed to in initiate production and install antenna system.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Mortar Plating System using Vacuum Arc Vapor Deposition (VAVD)Technology	Marine Corps	0.000*	0.259	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is evaluating a process for plating the interiors of worn 60mm and 81mm mortar tubes that are wearing faster than expected. Specifically, the project examines the use of Vacuum Arc Vapor Deposition (VAVD) technology. If this process is successful, the USMC will be able to plate material in worn areas and economically restore the infantry mortar tubes to a serviceable condition, providing a more cost-effective method in restoring mortar tubes to combat ready status.

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Vendor: Alpen Technology Group, Inc., Brownsboro, AL
Program Office of Record: USMC Warfighting Laboratory, Quantico, VA 22134

FY 2005 Plans: Obtain no cost modification (90 days performance required from 30 December 04) to the Phase I contract was extended to ATG to re-test the VAVD on a second set of test coupons. NSWC Dahlgren has machined and provided a second set of test coupons to ATG. ATG is currently in the process of plating the samples. If re-test of plated test coupons fails, project will be canceled. If re-test of plated test coupons is successful, Phase II contracting begins. ATG will construct the mortar plating system. Mortar tubes will be acquired from MARCORSSYSCOM as test articles. Mortar tubes will be plated with *Vacuum Arc Vapor* deposition technology; Initiate technical and operational tests (destructive and non-destructive tests).
FY 2006 Plans: Complete technical and operational tests. Procurement Decision 2nd quarter FY 2006.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
New Secure Version of Army Wireless Intercommunication System	Army	0.000*	0.517	0.218	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is the adaptation of an existing, certified wireless encryption device to an aircraft wireless intercom system to provide a close range secure communications capability for tactical rotary wing operations. This technology will decrease the risk of mission compromise and increase mission effectiveness and soldier safety. This technology is an excellent candidate for horizontal technology insertion with ground or mounted soldier small team communications devices and has joint service application potential.

Vendor: Telephonics Corporation, Communication Systems Division, Farmingdale, NY
Program Office of Record: Army PEO Soldier/PM Air Warrior

FY 2005 Plans: In the first quarter of FY05 we achieved NSA sponsorship. Plans for the remainder of FY 2005 include selecting the candidate encryption device and subcontractor, adapting the candidate device to the existing unencrypted wireless system, and building, testing, and delivering prototype encryption hardware.
FY 2006 Plans: Initiate the DoD Information Technology Security Accreditation Process with the NSA, with system certification planned for June 2006.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
“On Aircraft” Laser Additive Repair of Titanium Components	Air Force	0.000*	1.965	0.356	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is implementing the process of Laser Additive (on Aircraft) repair of damaged titanium B-2 airframe surfaces. This technology will improve mission readiness, currently compromised by cracks which develop on the aft deck. The proposed technology insertion program will improve the maintenance of mission readiness which is currently compromised by cracks which develop on the Aft Deck. The program will be enabled by the integration of a laser head and titanium feeding mechanism with a portable, adaptive, multifunctional machine tool pod incorporating a conformal inert gas shielding shroud and the development of a comprehensive process to fill cracks with micro-welded titanium alloy to restore the stealth integrity of the damaged surfaces.

Vendor: Triton Systems, Inc., Chelmsford, MA
 Program Office of Record: B-2 Systems Program Office

FY 2005-2006 Plans: Results of the 6-4 Ti development will be presented to the Government in January 2005. If unsuccessful in developing a laser refurbishment for 6-4 Ti, the program will be terminated and remaining funding will be returned to OSD. Assuming successful completion of this milestone, the contractor will then develop and demonstrate the laser weld repair procedure on Ti 6-2-4-2. This demonstration will occur in late FY 2005/early FY 2006. If the contractor is unable to successfully demonstrate the laser weld repair on Ti 6-4, the program will be cancelled.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Precision Parachute Delivery System (PPDS)	USSOCOM	0.000*	0.172	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is evaluating the High Altitude-Low Opening/High Altitude-High Opening (HALO/HAHO) Navigation Aid which will allow Special Operations Forces (SOF) infiltration capabilities in all environmental situations. Currently teams have little ability to navigate to a target unless it is seen at exit. This system makes it possible to land precisely during adverse weather conditions, which greatly reduces the possibility of detection, i.e. clouds, rain, and snow. This program will give the SOF community the capability and

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the confidence to accomplish the infiltration portion of their mission safely, accurately, and undetected in a wider range of environmental conditions.

Vendor: Prescott Products, Lockhart, Texas (Prime); European Aeronautical Defense and Space (Sub)
Program Office of Record: USSOCOM PEO, Special Programs (SP)

FY 2005 Plans: An Integration meeting is scheduled to finalize Helmet mounted display to the Gentex Parachutist Helmet 28 July 2005. System integration, hardware, software, graphical user interface (GUI) are expected to be finalized and first functional systems expected to be delivered at end of this quarter or beginning of next quarter. Yuma Military Free Fall schoolhouse and the Special Operations Airborne Test Board are expected to support testing and evaluation. Complete testing, data analysis, Milestone C.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Restore Effective Survival in Shock (RESUS)	Air Force	0.000*	1.723	0.373	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is a trial of bovine polymerized hemoglobin for the prehospital resuscitation of casualties in hemorrhagic shock. The item is a low volume and weight, room temperature stable substitute for blood transfusions. It is expected to significantly decrease combat casualty morbidity and mortality. Hemorrhage accounts for 60% of potentially salvageable combat casualties. Because 90% of these deaths occur prior to evacuation to a forward surgical theater, decreasing combat morbidity and mortality must focus on optimizing pre-evacuation resuscitation. Unlike older WWII and Vietnam resuscitation fluids, such as plasma, new products are effective as oxygen carriers and are highly likely to decrease hemorrhagic shock casualties, which remain at 30-100% depending on severity. The benefit of this program is that it will save lives of combat troops. Hemopure circulates directly in plasma when infused, increasing oxygen diffusion to the body's tissues and is compatible with all blood types, can be stored for 3 years without refrigeration, and is pathogen free. RESUS is a two-stage phase IIb/pivotal clinical trial project to compare the relative efficacy and safety of Hemopure with standard care products.

Vendor: BIOPURE Corporation, Cambridge, Massachusetts
Program Office of Record: 311 HSW, Human Systems Program Office, Brooks Air Force Base, Texas

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FY 2005 Plans: Complete contractual agreements with State I trauma centers. Initiate contractual agreements with Stage II trauma centers. Complete study procedure manual. Complete lab interference challenge at Stage I trauma centers. Initiate lab interference challenge at Stage II trauma centers. NMRC plans to submit the RESUS IND 28 Jan 2005, anticipates an FDA allowance and initiation of the Community Consultation and Disclosure (CCD) part of the program by 1 March 2005, and subject enrollment in Stage I by late March 2005. Complete IND-enabling preclinical (animal) study. This animal study involves Traumatic Brain Injury with uncontrolled bleeding in a swine model and is required before the FDA will accept the IND from the Navy for HBOC-201 and allow the RESUS trial to begin.

FY 2006 Plans: Concomitant NMRC IRB and BUMED approval anticipated. As RESUS requires provisions for Exception from Informed Consent (EIC), in accordance with DOD Directive 3216.2, approval will be required from the “component head”. Select vendor for the Data Management System for the clinical trial.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Spray Cool™ Counter Targeting System (CTS)	Army	0.000*	0.239	0.000	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is evaluating a new technology insertion to enable spiral development of the Counter Targeting System (CTS). CTS utilizes an infra-red (IR) sensor at high frame rates to detect sniper, mortar, RPG, and large caliber weapons fires. This system will assist in near real-time targeting and situational awareness for direct support of combat troops in operations such as Iraq and Afghanistan. If successful, the Spray Cool technology will reduce CTS weight of 400+ pounds to less than 100 pounds. First test articles will be field tested in Iraq.

Vendor: Isothermal Systems Research (ISR), Inc., Clarkston, WA
 Program Office of Record: Army Intelligence and Security Command

FY 2005 Plans: Receive miniaturized processors. (Jul 05). Integrate into network centric operations. Integrate into aerial vehicle configuration for wide area surveillance. Integrate into the CENTCOM Counter Strike Task Force system for combating terrorism in OIF.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
WDM Fiber Optic Global Position System Anti-Jam Antenna	Navy	0.000*	0.862	0.000	0.000

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*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

This project is evaluating Wave Division Multiplexing (WDM) technology with shipboard GPS Anti-Jam antenna assembly to determine if it can provide transmission of multiple RF signals through a single optic fiber. If successful, this project will enable relocation of the GPS antenna electronics from high on the mast to below decks where it is protected and readily accessible for maintenance.

Vendor(s): Gould Fiber Optics, Millersville, MD; Optiwork, Fremont, CA; JDS Uniphase Corp., San Jose, CA; Tempo Research, Camarillo, CA; Fiber-Span LCC, Piscataway, NJ
Program Office of Record: SPAWAR PEO Command, Control, Communications, Computers, and Intelligence and Space (PMW/A-170)

FY 2005 Plans: Prototype production representative units are expected for delivery for test and integration by mid February 2005. Extended 7-channel test efforts are in progress to evaluate the requirements to have GAS-WDM components be identical no matter what platform on which they are deployed. Therefore, the effects of chromatic dispersion will be examined in light of the cable length differences of deployed systems. Additional reliability analysis of the production representative antenna assemblies with some key performance parameters evaluated: GPS system jamming performance test, environmental qualification test for high risk areas (shock, vibration, temperature, solar radiation), and shipboard operational test to certify readiness for fleet implementation.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
X-Cor as a Replacement for Conventional Honeycomb	Army	0.000*	1.494	0.995	0.000

*FY 2004 funding for this project was provided under the Quick Reaction Special Projects (QRSP) Program PE 0603826D8Z.

X-Cor is a lightweight, damage tolerant core material that replaces conventional honeycomb in aerospace structures. A 10% weight reduction over the baseline honeycomb on Black Hawk is estimated. This is critical because weight reduction is quite significant to the program in two respects. First, it greatly increases helicopter performance, particularly in vertical lift/rise capability, which greatly increases aircraft survivability and capacity; and, second, this 10% reduction could amount to a 25% RDT&E cost avoidance over other weight reducing alternatives.

Vendor: Aztex, Inc, Waltham, MA
Program Office of Record: PM-Black Hawk

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FY 2005 Plans: Complete qualification program and produce 4 ship-sets of finished detailed parts. Develop and secure approval of the quality plan and all the necessary production control documentation.

FY 2006 Plans: Ensure that process is fully defined and robust to support supply of shaped X-Cor™ sets up at full rate quantities required by Black Hawk.

FY2005 NEW START PROJECTS:

COST (in Millions)	Service	FY 2004	FY 2005	FY 2006	FY 2007
Affordable Net Shape Stiffener Forming Technology for F/A-18E/F	Navy	0.000	1.034	0.870	0.000

This program will improve the affordability of the US Navy F/A-18E/F Super Hornet Strike Fighter by automation of the forming process for composite hat stiffeners in the airframe structure. Implementation of the proposed technology would result in a significant recurring cost savings across the F/A-18E/F and the planned F/A-18G procurements. Creating a process that reduces the cost of composite stiffening elements also has a potential benefit for future aircraft programs such as J-UCAS where lower cost stiffeners will reduce the cost of skin-stringer construction. Skin-stringer construction is a very robust structure that would be more widely implemented were it cheaper to produce.

Vendor: Foster-Miller, Waltham, MA

Program Office of Record: PMA 265 F/A-18 E/F SuperHornet, Naval Air Systems Command, 42173 Buse Road, Patuxent River, MD 20670-1547

FY 2005 Plans: In FY 2005, the effort will focus on validation of the structural, manufacturing, materials and processes, and quality assurance requirements as well as cost/benefits assessments. The hat stiffener forming process will be developed and refined to support the identified requirements. Also to be addressed in FY 2005 is the development of the fillet forming process; the size and shape of which is critical to producing high quality and high strength hat stiffeners.

FY 2006 Plans: Focus on the integration of the developed process with existing processes for hat stiffener braiding and trimming. Process validation testing and evaluation will be conducted to ensure that the hat forming processes provide high quality stiffeners, and that these stiffeners are compatible with the stiffened panel production process. This will be followed by detailed business case development to support implementation of the process in first quarter of FY 2007.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
Battery Free Remote Sensing	USSOCOM	0.000	1.045	0.000	0.000

This project will test and evaluate a solar based, energy storage system for use in Unattended Ground Sensors (UGS). Existing vendor technology will be extended to provide higher output power and improved energy storage in a package more consistent with the stringent size, weight and power requirements necessary for SOF operations.

Vendor(s): Ambient Control Systems, California
 Program Office of Record: USSOCOM PEO, Information and Intelligence Systems (IIS)

FY 2005 Plans: Conduct project planning. Contract for and receive test articles. Conduct Analysis, study and Integration. Analyze vendor data.

FY 2006 Plans: Conduct Phase I Technical Testing. Conduct Phase II Operational Test and User Assessment. Milestone C Decision. Submit DACP Close-out Report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Composite Twisted Rudder	Navy	0.000	1.568	1.473	0.000

The US Navy has developed a “twisted” shape for DDG 51 Class New Construction surface combatant rudders to reduce cavitations erosion problems and improve fuel efficiency. The twisted rudder geometry is difficult to build and maintain using traditional welded steel construction. This project will build, qualify and install a shipset of composite rudders on DDG 51 Class Ship to demonstrate improved survivability and reduced acquisition and life cycle cost

Vendor(s): Structural Composite Inc., Melbourne, FL.
 Program Of Record: US Navy, PEO-Ships, NAVSEA SEA05

FY 2005 Plans: Small-scale laminate characterization, this project will be performed on reinforcements ultimately selected for construction. Phase one structural analysis and process trials, along with product availability, will determine the exact

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reinforcement architecture. Full thickness laminates may not be tested as the load required to break these samples is beyond the capability of in-house test equipment. However, fiber orientation will be faithfully reproduced in test laminates. Component static & shock test, the static load test will be conducted to verify the composite rudder's ability to sustain the ultimate load defined in the DDG Ship Specification. The ultimate normal pressure load will be obtained from the U.S.Navy and applied on the skin surface.

FY 2006 Plans: Full-scale static & fatigue testing, a series of shock tests will be performed on the first article full-scale composite twisted rudder. This testing will be conducted to verify the structural integrity of the composite rudder and the dynamic response analysis. Full-scale shock test –inspection and vibration (SIDER) testing. At sea validation.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Enhanced Military Readiness, Safety, and Personal Bearing through Pseudofolliculitis Barbae (PFB) Treatment	Air Force	0.000	1.274	1.232	0.000

Pseudofolliculitis barbae (PFB), commonly known as "razor bumps," has been recognized by Congress and the Department of Defense (DoD) as a significant dermatologic disease in the US military and affects combat readiness, personal safety, unit cohesion, and individual morale. This project focuses efforts on providing a treatment option that targets the inflammatory reaction that occurs in individuals affected by PFB. It also focuses on providing an alternative treatment option compared to existing PFB treatment tools for this military relevant disease.

Vendor: Keesler AFB
Program Office of Record: Air Force /Surgeon General

FY 2005 Plans – Develop test plan. Conduct FDA review and approval of test plan. Conduct stability and compatibility testing for IAW-AP-01 (test article). Conduct 28 day Military Safety and Efficacy trial. Evaluate report for go-no go decision.
FY 2006 Plans – Conduct 90 day Military Efficacy testing and develop evaluation report. Procurement decision.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
Field Interrogation Support Tool	USSOCOM	0.000	0.696	0.000	0.000

The Field Interrogation Support Tool (FIST) is a hand-held computerized voice stress analysis device which hosts technology for use in interpersonal operations. It makes use of proven software currently used in the Computer voice Stress Analyzer™ and hosted in a COTS laptop for processing voice. This DAC will rewrite the software algorithms making it possible to re-host the software in a hand-held Personal Digital Assistant (PDA). Automated graphical display features currently require manual evaluation by a trained technician will also be provided but enhanced for field use and on the spot evaluation by personnel without specialized skills training. The new product will be repackaged into the hand-held device for SOF, however use by other services and government agencies involved in law enforcement are expected to purchase this product.

Vendor(s): Concurrent Technologies Corp. (FI)
 Program Office of Record: USSOCOM PEO, Information and Intelligence Systems (IIS)

FY 2005 Plans: Project funding received. Contract for and receive test articles. Analyze data. Conduct Phase I technical testing. Conduct Operational Test. Milestone C Decision. Submit DACP Close-out Report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
GBS Transponder Throughput Improvement Using DVB-S2	Air Force	0.000	0.833	0.118	0.000

DVB standards organization has created and approved a new specification in January 2004 called DVB-S2 due to a need for a more efficient bandwidth and power technology. Efficient Channel Coding (ECC), Inc. participated in this standards activity to help create the new standard. ECC is developing a Field-Programmable Gate Array (FPGA) followed by an Application-Specific Integrated Circuit (ASIC) that meets the DVB-S2 standard. DVB-S2 benefits from recent developments in channel coding and modulation and provides significantly increased capacity for maximum possible efficiency of error-correcting methods.

ECC will transition the Global Broadcast Service (GBS) waveforms from the current air interface that uses legacy DVB-S technology to a new standard, DVB-S2, with a resulting increase in GBS satellite transponder data throughput in the Ka and Ku bands of at least 30%.

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Vendor(s): ECC, Inc.
Program Office of Record: AF/DISA

FY 2005 Plans – All tests will be done in three phases over satellites using DISA and or Norfolk satellite uplink facilities. Initiate Phase 1 (Satellite Loop-back Technical Testing). Perform satellite loopback testing using ECC supplied DVB-S2 prototype equipment. Analyze data to determine if project continues into Phase 2. Initiate Phase 2 (Operational testing). Validate the ECC provided DVB-S2 transmitter and receiver characteristics and general capabilities, evaluate the suitability as stand-alone components in a field environment, the capability to interface with legacy systems and an operational utility assessment by selected forces. Analyze data to determine if project continues into Phase 3.

FY 2006 Plans: Initiate Phase 3 (GBS Demonstration) A demonstration of operational effectiveness and suitability of the DVB-S2 waveform. The results of all testing will be used to obtain GBS system production certification and approval for the fielding and deployment of this system.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Improved Durability F100 Exhaust Nozzle Divergent Seals	Air Force	0.000	0.730	0.278	0.226

The F100 turbine engine, which powers the F-15 and F-16 fighter aircraft, has an axisymmetric translating exhaust nozzle. This nozzle utilizes 15 metallic divergent seals that have a high field replacement rate. The metallic seals at the five hot streak locations survive only 700 Total Accumulated Cycles (TACs), while the SPS Ceramic Matrix Composite (CMC) seals survived the full 4300 TACs. The DACP will evaluate the flight performance of a unique, extended life capable F100 divergent seal developed by Snecma Propulsion Solide (SPS) in France. The CMC Divergent Seal technology would be applied to the U.S. Air Force F-15 Eagle aircraft turbine engine exhaust nozzles on an attrition basis.

Vendor: Pratt & Whitney Prime Contractor for F100 Engine
Program Office of Record: Air Force Research Laboratory, Wright-Patterson AFB

FY 2005 Plans: Conduct field service evaluations at two locations (Mountain Home AFB and McEntire AFB). Eight seals will be available for the initial start of the field service evaluation in January 2005. Inspect seals every 2-4 weeks for signs of erosion, cracks, delaminations, excessive wear and loose attachments. At 350 TACs, conduct seal removal for tensile strength measurements.

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FY 2006 Plans: Remove two CMC seals to conduct non-destructive as well as destructive evaluations. Machine CMC seals into tensile specimens and test for retained tensile strength. Analyze data from field service, non-destructive/destructive and tensile strength evaluations to determine if technology performance is satisfactory.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Infrared Thermal Friendly Force Identifier	USSOCOM	0.000	0.172	0.000	0.000

Current means of distinguishing dismounted operators as friend and foe are not sufficient to meet evolving battlefield situations. This project will determine final designs then test and evaluate a compact lightweight beacon will that allow differentiation of friendly forces versus foe when viewed through current infrared and thermal sensors. The beacon will be programmable and adjustable for use in multiple situations and easily attachable to various types of existing Special Operations Forces (SOF) individual equipment.

Vendor(s): LazerBrite (UT) and Surefire (CA)
 Program Office of Record: USSOCOM PEO, Special Programs (SP)

FY 2005 Plans: Complete technical review and down-select. Acquire test articles for Phase I technical and safety testing. Perform Phase I final test and design. Acquire test articles for Phase II testing. Begin Phase II Technical and Operational Tests. Complete Phase II Technical and Operational tests. Milestone C Decision. Submit DACP Close-out Report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Low Frequency Synthetic Instrument Measurement and Stimulus System (SIMSS-LF)	Air Force	0.000	0.319	0.204	0.000

The Synthetic Instrument Measurement and Stimulus Low Frequency (SIMSS-LF) system supports improving aircraft avionics and Electronic Attack (EA) pod test capability required to expedite repair of critical assets during deployed and home base operations. This single synthetic instrument leverages the power of the latest technologies in Digital Signal Processing (DSP) techniques and simplified VXI-based hardware to measure electrical signals more accurately than the many special purpose measurement instruments it replaces.

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Vendor: BAE SYSTEMS, Mission Solutions
Program Office of Record: F-16 System Program Office, WPAFB

FY 2005 Plans: Conduct Signal Characteristic Capture evaluation to measure proper signal characteristic capture (e.g., rise time), for accuracy, and for resolution by comparing the returned parameter values against the known injected signal from the National Institute of Standards and Technology (NIST) certified secondary standard. Conduct data gathering and analysis for each measurement type across its associated frequency bands and amplitude ranges will be performed. Data will be used to create tabulated list of parameters and results from the testing will be recorded and analyzed.

FY 2006 Plans: Conduct demonstration of selected, representative signal measurements to illustrate the LF Measurement Synthetic Instrument capabilities. Develop test and evaluation report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Maritime Diesel Engine Nickel Boron Coating	USSOCOM	0.000	0.719	0.000	0.000

This project will evaluate a process for Nickel Boron Coating to extend the service life of diesel engines and drive assembly. A lightweight high power density diesel engine is a highly desirable replacement for the current gasoline engines. Coating the propulsion system components with Nickel Boron is an effective way to increase the power to weight ratio and extend the propulsion systems lifecycle.

Vendor(s): Universal Chemical Technologies, Inc. (FI)
Program Office of Record: USSOCOM PEO, Special Programs (SP)

FY 2005 Plans: Receive project funding. Complete test planning. Contract for and receive test articles. Begin Phase I test of uncoated test articles. Complete Phase I test of uncoated test articles. Conduct test of coated test articles. Milestone C Decision. Submit DACP Close-out Report.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
Miniature Day/Night Sight Integration	USSOCOM	0.000	0.770	0.000	0.000

The Miniature Day/Night Sight (MDNS) program enhances Special Operations Forces (SOF) weapons capabilities for carbines, rifles and machine guns. It includes weapons components/sub-systems for fire control, target acquisition, and aiming. This project will evaluate the improvement, miniaturization, ruggedization and integration of numerous existing/improved components/sub-systems to provide one fully integrated, modular and MDNS system for SOF weapons.

Vendor(s): Multiple US vendors
 Program Office of Record: USSOCOM PEO, Special Programs (SP)

FY 2005 Plans: Receive project funding. Contract for and receive test articles. Conduct technical and operational tests. Milestone C Decision. Submit DACP Close-out Report.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Qualification of Conformal Fabrics	Air Force	0.000	0.919	0.995	0.000

Pepin Associates, Inc. will work with Boeing/Phantom Works to qualify a conformal fabric for use in composite aircraft structures. This fabric conforms to complex shapes thereby reducing fabrication cost and enabling the design of highly contoured composite structures common on advanced aircraft. Pepin/Boeing team conducted sufficient process risk reduction to warrant material qualification. Boeing will guide the effort to qualify this material in accordance with Boeing Standard Material Specification (BSMS) procedures.

Vendor: Pepin Associates, Inc./Boeing Phantom Works
 Program Office of Record: J-UCAS, WPAFB

FY 2005 Plans: Establish test matrix to specify the property of the test and repeatability of the property over the test specimens. Select fiber and matrix. Fabricate test panels and machine specimens from panels.
 FY 2006 Plans: Perform mechanical and thermal tests and data review.

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	Service	FY 2004	FY 2005	FY 2006	FY 2007
Quiet Eyes Low Cost DIRCM Laser-Pointer-Tracker Demonstration	Air Force	0.000	3.102	2.860	0.000

The quiet eyes program will design, build, test and demonstrate a low cost DIRCM (Directed Infrared Countermeasures) micro-turret (Quiet Eyes) for Large Aircraft IR Countermeasures (LAIRCM) requirements. The micro-turret leverages the guidance unit (gimbaled sensor and electronics unit) from the AIM-9X missile to significantly improve the cost, size, weight and reliability over existing DIRCM turrets. Following a modification to the AIM-9X guidance unit, the micro-turret will be integrated with a multi-band mid wave IR laser to demonstrate required pointing accuracy, stability, gimbal rates, optical cross-talk, laser power, laser wavelengths and beam quality. Raytheon will demonstrate break-lock for representative threat missile seekers first in the laboratory and then during tower tests at Wright Patterson AFB, OH.

Vendor: Raytheon Missile Systems
 Program Office of Record: ASC/GRI, Wright Patterson AFB, Ohio, 45433-7605

FY 2005 Plans: Modify the AIM-9X seeker to become a low-cost, high-performance DIRCM pointer/tracker (micro-turret) Add a laser transmitter path to the AIM-9X gimbal. Integrate modified gimbal with a multi-band IR laser.
 FY 2006 Plans: Perform tower demonstration with multi-band IR laser to verify pointing accuracy, stability, gimbal rates, optical cross-talk, laser power and beam quality. Ground demonstrate break lock for representative threat missile seekers at up to 2km range.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Spraycool Technology Solutions for Close In Weapons System (CIWS) Power Amp	Navy	0.000	1.700	0.109	0.000

This effort will address several critical issues facing the power amplifier section of the Close-in Weapon System. This effort will convert the power amplifier section to a Spraycool solution to dissipate heat more efficiently and improve reliability. The improved reliability will also allow a greater range of choices for follow-on commercial-off-the-shelf circuit card replacement. Spray cooling is a very efficient process that enables the use of high density Circuit Card Assemblies (CCAs). It also provides other important

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attributes contributing to harsh environment survivability. Maintaining the electronics at a constant temperature and the reduction in thermal cycling improves the meantime between failures of the Line Replaceable Unit (LRU).

Vendor(s): Isothermal Systems Research, Inc., Liberty Lake, WA
Program Of Record: US Navy, PEO-IWS

FY 2005 Plans: Spray cooling factory acceptance testing: This test includes acceptance testing in accordance with the vendors ISO quality standards to ensure proper performance and workmanship. The milestone that will signify completion of this phase is delivery of the completed system to NAVSEA. Environmental qualification testing: Environmental qualification testing will be performed on the spray cooling hardware and the servers both before and after conversion to spray cooling. The milestone that will signify the completion of this phase is a test report and presentation charts highlighting the results. Shipboard operational testing: This test will include the installation and integration of the spray cooling system and converted power amplifier drawer. The test will include operational exercises as directed by NAVSEA.

	Service	FY 2004	FY 2005	FY 2006	FY 2007
Superior Surface Treatment Techniques for Adherent Bore Coatings	Army	0.000	0.448	0.485	0.000

The ‘Superior Surface Treatment Technique for Adherent Bore Coatings’ project, will apply innovative industrial plasma engineering and surface treatment techniques to improve protective gun bore coatings against high temperature wear and erosion. The techniques are applicable to Future Combat System cannons, Legacy cannons (Abrams), and Navy advanced Gun System. The project represents excellent Benefit to Investment Ratio (BIR) from gun bore life extension savings and environmental savings from electrolytic Chromium replacement.

Vendor(s): Southwest Research Institute, San Antonio, TX

FY 2005 Plans: Conduct Phase 1 Test (Coupon Sample Demonstration) to include: improved electrochemical clean with new NaCl electrolytes, hydrogen plasma cleaning and nitriding for enhanced adhesion, ion-assisted cylindrical and in-situ magnetron deposition, and demonstrate superior adhesive coatings on gun steel coupons.
FY 2006 Plans: Conduct Phase 2 Test (Bore Section Deposition) to include: optimize new surface clean, interface preparation and coating deposition techniques, demonstrate superior adhesive coatings on FCS 120mm smooth bore and 155mm rifled bore sections by erosion firing simulator, analytical testing including Vented Erosion Simulator (VES) testing, live fire

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performance testing of legacy/FCS test-asset barrel. Technology transition to legacy (Abrams) and FCS (e.g., FCS-MCS) gun systems.

FY2006 DACP Program Plans:

For FY 2006, the DACP program will continue to fund testing activities on 15 projects executing \$11.606 million in FY 2006 funding. Remaining funding will be used to initiate new start DACP Projects selected from the FY 2006 DACP Proposal Process. The FY2006 DACP Proposal Process will begin with the release of the BAA scheduled for February 2005. Final selection of FY2006 New Start DACP Projects is planned for July 2005.

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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						Date: February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense Wide/BA 5					R-1 ITEM NOMENCLATURE 0604618D8Z, Man Portable Air Defense Systems (MANPADS) Countermeasures			
COST (<i>In Millions</i>)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total Program Element (PE) Cost	2.871	11.923	13.349	0.936	0.970	0.950	0.968	0.989
MANPADS Countermeasures	2.871	11.923	13.349	0.936	0.970	0.950	0.968	0.989

(U) **A. Mission Description and Budget Item Justification**

A. (Mission Description and Budget Item Justification:

(U) Man Portable Air Defense (MANPAD) systems are very widely proliferated, with greater than 500,000 produced and many poorly controlled. These weapons can be easily concealed and transported in a container as small as a suitcase, and can be lethal to a wide range of military and dual use aircraft. MANPAD systems and their launchers are available on the black market for as little as \$15,000. As demonstrated by recent events in Operation Iraqi Freedom, Department of Defense (DOD) and Civil aircraft are attractive terrorist targets.

(U) The process of defeating an IR missile includes two necessary tasks, detecting missile launch, and executing countermeasures to defeat the missile guidance system. Modern IRCM systems rely on sensors mounted on the protected aircraft and either infrared decoys (flares) or directed energy lamp or laser systems. Although various onboard systems have been developed and fielded to counter the IRCM threat, including MANPADS, they remain costly (between \$250,000 and \$5,000,000 per aircraft installation) and their integration is complex and time consuming.

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(U) Alternatives are needed to reduce the cost and lead time required to protect aircraft from IR missiles in the near-ground urban and expeditionary environment. This program investigates the development of a ground based, networked electro-optical sensor grid that would provide missile launch detection and warning, including examination of commercially available components to lower costs and to reduce the lead-time for system fielding. In conjunction with development of ground based sensor grid, directed energy technologies that could be used to counter ManPADS will be evaluated. By using vehicle mountings and wireless networking, it will be potentially possible make the system readily portable for rapid coverage area reconfiguration. Expeditionary airfields could thus be quickly protected.

(U) A second component of this program explores the development of more affordable countermeasures technologies suitable for use in urban and expeditionary airfield environments.

(U) The objective of this effort is to develop and demonstrate a low-cost, rapidly fieldable IRCM options for the rapid protection of expeditionary airfields and urban areas where comprehensive onboard protection cannot be guaranteed.

B. Program Change Summary: (Show total funding, schedule, and technical changes for the program element that have occurred since the previous President's Budget Submission)

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	2.958	14.135	13.674	0.970
Current FY2006 President's Budget	2.871	11.923	13.349	0.936
Total Adjustments	-0.087	-2.212	-0.325	-0.034
Congressional program reductions	-0.087	-2.212		
Congressional rescissions				
Congressional increases				
Reprogrammings				
SBIR/STTR Transfer				
Other			-0.325	-0.034

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RDTE&E Budget Item Justification Sheet (R-2a Exhibit)				Date: February 2005				
Appropriation/Budget Activity RDTE&E, Defense Wide/BA-5				R-1 Item Nomenclature Man Portal Air Defense System (MANPADS) Countermeasures PE 0604618D8Z				
Cost (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY2007	FY 2008	FY 2009	FY 2010	FY 2011
MANPADS	2.871	11.923	13.349	0.936	0.970	0.950	0.968	0.989

A. Mission Description and Budget Item Justification

(U) Man Portable Air Defense (MANPAD) systems are very widely proliferated, with greater than 500,000 produced and many poorly controlled. These weapons can be easily concealed and transported in a container as small as a suitcase, and can be lethal to a wide range of military and dual use aircraft. MANPAD systems and their launchers are available on the black market for as little as \$15,000. As demonstrated by recent events in Operation Iraqi Freedom, Department of Defense (DOD) and Civil aircraft are attractive terrorist targets.

(U) The process of defeating an IR missile includes two necessary tasks, detecting missile launch, and executing countermeasures to defeat the missile guidance system. Modern IRCM systems rely on sensors mounted on the protected aircraft and either infrared decoys (flares) or directed energy lamp or laser systems. Although various onboard systems have been developed and fielded to counter the IRCM threat, including MANPADS, they remain costly (between \$250,000 and \$5,000,000 per aircraft installation) and their integration is complex and time consuming.

(U) Alternatives are needed to reduce the cost and lead time required to protect aircraft from IR missiles in the near-ground urban and expeditionary environment. This program investigates the development of a ground based, networked electro-optical sensor grid that would provide missile launch detection and warning. In conjunction with development of ground based sensor grid, ground based directed energy technologies that could be used to counter ManPADS will be evaluated. A second component of this program explores the development of more affordable countermeasures technologies suitable for use in urban and expeditionary airfield environments.

(U) The objective of this effort is to develop and demonstrate a low-cost, rapidly fieldable IRCM option for the protection of expeditionary airfields and urban areas where comprehensive onboard protection cannot be guaranteed.

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B. Program Plans – FY 2005 Through FY 2006:

	FY 2004	FY 2005	FY 2006	FY2007
ManPADS Defense	2.871	11.923	13.349	0.936

(U) Based upon results from an FY 2003 study, this effort is planned to consist of two demonstration phases. Phase I will consist of a ground-based sensor grid component evaluation, system design, performance evaluation and demonstration. Phase II will consist of reduced cost, ground and/or on aircraft countermeasures.

(U) The initial testing will occur at the Naval Air Warfare Center, Weapons Division (NAWC-WD), China Lake, and will consist of a network of promising ground sensors. Objectives of the test are to show that the sensor and associated computational algorithms can reliably detect a missile launch and provide a declaration in sufficient time to initiate appropriate countermeasures (time is classified).

(U) The ground based sensor grid will consist of an array of sensors that constantly monitor for the presence of a MANPAD launch. Several factors favor this architecture, with much higher detection and lower false alarm rates than current on-aircraft launch detectors. The sensor grid will use commercially available components to reduce cost and the lead-time to field a system. Additionally, it will be possible make the system portable by mounting the sensors on vehicles and using wireless networking between the sensors. Expeditionary airfields and urban areas could be quickly augmented for MANPADS protection.

C. Other Program Funding Summary: N/A

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Exhibit R-2, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS EMD			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	20.780	32.669	13.745	13.737	14.608	14.613	14.902	15.232
ARTS	0.000	0.675	0.000	0.000	0.000	0.000	0.000	0.000
CRS	7.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000
RCSS	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
JOINT SERVICE EOD	0.000	3.250	1.500	2.000	2.500	3.000	3.000	3.000
GLADIATOR	0.000	12.400	9.534	7.400	0.000	0.000	0.000	0.000
MDARS-E	10.680	1.000	2.711	0.000	0.000	0.000	0.000	0.000
NUSE2	0.000	8.594	0.000	1.029	0.000	0.000	0.000	0.000
NCDR-ROBOTICS GREENHOUSE	0.000	3.250	0.000	0.000	0.000	0.000	0.000	0.000
Material Infrastructure	0.000	3.500	0.000	0.000	0.000	0.000	0.000	0.000
Technology Maturation	0.000	0.000	0.000	3.308	12.108	11.613	11.902	12.232

A. Mission Description and Budget Item Justification:

This program is a budget activity level 5 based on the successful transition of robotic technologies from Concept and Technology Development activities to System Development and Demonstration (SDD) as part of an Evolutionary Strategy. Individual Services are responsible for requirements generation and procurement funding. Within the JRP, emphasis is on the development of robotic technologies that are usable in multi-service missions; provide capability in hazardous environments; provide improved battlefield efficiency using supervised autonomous operational capability; reduce or enhance force manpower and sustainability; and are affordable. This PE consolidates the DoD robotics program for Unmanned Ground Vehicles (UGV) and advances UGV concepts into SDD for programs of record.

The JRP is entering a planned transition period to re-orient this program element towards advancing and maturing robotics technologies for insertion into service SDD programs of record. This transition was approved by senior service representatives at the JRP Senior Steering Group meeting in November 2004. The Services agreed that after transition of the current programs of record, future SDD funding will become a Service responsibility. The JRP will concentrate on maturing specific technologies and interoperable capabilities for insertion into Service programs.

All Purpose Remote Transport System (ARTS):

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ARTS is a self-propelled, remotely operated platform used to transport specialized explosive ordnance disposal (EOD) tools and equipment. Missions include airfield clearance, sub-surface UXO/mine excavation, remote movement of obstructions, WMD extraction/isolation, SMUD operations, and RECON. The ARTS consists of the basic mechanical transporter platform, a robotics control package, and attachment assemblies. USAF EOD personnel use the ARTS to neutralize or remove unexploded ordnance (UXO), and to diagnose and defeat Improvised Explosive Devices (IEDs). The original ARTS contract was structured as a build to print competitive procurement. The contract was awarded to Applied Research Associates, Inc. (ARA) of Albuquerque, New Mexico with manufacturing performed at ARA New England Division, South Royalton, VT. The transporter platform, Posi-track MD-70 is made by All Seasons Vehicle (ASV), Inc., Grand Rapids, Minnesota. AAC/YB is the Single Manager (SM) and Ogden Air Logistics Center (OO-ALC) is the Primary Inventory Control Activity (PICA) with mission area assignment responsibility for the robotics. ARA is producing a total of 72 ARTS under contract F08635-00-C-0027. Basic attachments developed for the ARTS include a Dragon water cannon mount, a Surface Clearance Blade Assembly, and a Robotic Backhoe Assembly. Preplanned Product Improvements (P3I) completed include: a fiber optic Alternate Control System (ACS), EMI Resistance, Improved Operator Control Station (IOCS) and lift/tie down points for sling load certification. Further P3I projects ongoing include a data feedback system (DFS), integration of the Joint Submunitions Clearance System (SCS), integration of the Harley Box Rake to replace the clearance blade, an updated/AF-wide ARTS trailer, and a study for follow-on ARTS radios.

- Design in JAUS compliance to the applicable ARTS software architecture and participate in experiments for all-service robot system interoperability.
- ARTS radio upgrade study to alleviate international frequency allocation problems that have made some current RF operations impossible.
- Design an ARTS support trailer suitable for worldwide AF missions.

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B. Program Change Summary:

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	21.381	13.845	14.081	14.264
Current FY 2006 President's Budget Submission:	20.780	32.669	13.745	13.737
Total Adjustments:	-0.601	+18.824	-0.336	-0.527
Congressional program reductions:	-0.151	-0.776		
Congressional rescissions:				
Congressional increases:		19.600		
Reprogrammings:				
SBIR/STTR Transfer:	-0.450			
Other:			-0.336	-0.527

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Performance Metrics:

The Joint Robotics Program prepares and publishes its JRP Master Plan annually. The Plan contains detailed descriptions of the approximately 4 individual projects under this funding line. Each project description includes a task schedule with associated milestones, whereby progress against end goals can be measured. The cost, schedule and technical progress against these milestones is reviewed by DoD participants at semi-annual JRP Working Group meetings.

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Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
CRS	7.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Common Robotic System (CRS) program is a generic and modular robotic system that can be retrofitted to many different military applications and vehicles. The U.S. Army approved the Operational Requirements Document (ORD) in September 1997. CRS is being integrated to the GSTAMIDS Block 0 countermines system and USMC Assault Breacher Vehicle (ABV) to allow remote obstacle breaching operations (minefields, earthworks, bunkers and obstacles such as clearing of rubble in a MOUT environment or a man-made obstacle covered by enemy fire). The Joint Project Office continues to support CRS integrated M1A1 Panther systems for contingency support in Iraq, Bosnia and Kosovo that have cleared over 500 mines and submunitions. Panther is a tank chassis with CRS system and mine rollers used to proof roads or fields for mines.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	7.600	0.000	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

FY 2004 Accomplishments:

- Continued engineering and program management support for CRS system development.
- Continued SDD acquisition activity for the design, manufacture, and deliver of engineering prototypes for CRS.
- Conducted CRS IPR.
- Initiated CRS competitive Source Selection.
- Tested CRS contingency kits for GSTAMIDS Block 0.
- Delivered kits for the Assault Breacher and UGV ROP testing.
- Program ended due to loss of procurement funding.

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	7.600	0.000	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

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C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February-2005				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				CRS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development				3.141								
Ancillary Hardware Development												
Systems Engineering				2.318								
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development				5.459								
Remarks:												
Development Support				0.240								
Software Development				0.600								
Training Development												
Integrated Logistics Support				0.180								
Configuration Management				0.180								
Technical Data												
GFE												
Subtotal Support				1.200								
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005				
DEFENSE-WIDE			Program Element				CRS					
BUDGET ACTIVITY 5			PE 0604709D8Z									
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYS Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT				0.661								
IOT&E												
Subtotal T&E				0.661								
Remarks:												
Contractor Engineering Support												
Government Engineering Support				0.160								
Program Management Support				0.120								
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management				0.280								
Remarks:												
Total Cost				7.600								
Remarks:												

Exhibit R-4, Schedule Profile																									Date: February 2005																									
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name CRS																										
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010																	
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4														
Acquisition Milestones																																																		
Contingency Prototypes																																																		
T&E Milestones																																																		

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity Research, Development, Test & Evaluation, Defense-Wide, Budget Activity 4	Program Element Number and Name PE 0603709D8Z Joint Robotics Program			Project Number and Name Common Robotic System (CRS)				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
SDD	1-4Q	1-4Q	1-4Q					
Milestone C								
LRIP GSTAMIDS			3Q					

R-4a Schedule Profile

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Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
RCSS	2.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Robotic Combat Support System (RCSS) Program is an upgrade approach from the Product Improved Mini-Flail (PIMF). The PIMF has proven effective in Bosnia and Kosovo, as well as in Afghanistan, as a contingency asset. RCSS threshold requirements include anti-personnel mine clearing and neutralization, improved reliability and human-machine interface, wire obstacle breaching, remotely deployed smoke and obscurants, and the capability to carry soldier loads. P3I requirements include advanced controls, remotely delivered special munitions to support dismounted operations, hands-free control using dismounted soldier leader-follower technology, and mechanical devices that will be used to emplace demolitions and special breaching systems. A Mission Need Statement (MNS) and an Operational Requirements Document (ORD) have been approved by Army Training and Doctrine Command (TRADOC). Procurement of COTS contingency RCSS system began in FY04 based on urgent requirement to provide countermine capability to the operating force. Procurement continues through FY 2006, while system engineering to develop full ORD required capability will be developed and integrated into the operational fleet.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	2.500	0.000	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

FY 2004 Accomplishments:

- Revised Acquisition Strategy to meet War on Terrorism Urgent Requirements.
- Conducted market survey to determine availability of COTS capability.
- Selected RCSS COTS vendor.
- Program ended due to loss of procurement funding

C. Other Program Funding Summary: Not Applicable

D. Acquisition Strategy: Not Applicable

E. Major Performers: Not Applicable


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Exhibit R-3 Cost Analysis (page 1)							Date:	February 2005					
DEFENSE-WIDE			Program Element				RCSS						
BUDGET ACTIVITY 5			PE 0604709D8Z										
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development	CPFF			0.779									
Ancilliary Hardware Development													
Systems Engineering				0.602									
Licenses													
Tooling				0.052									
GFE													
Award Fees													
Subtotal Product Development				1.433									
Remarks:													
Development Support				0.052									
Software Development				0.086									
Training Development				0.105									
Integrated Logistics Support				0.085									
Configuration Management				0.075									
Technical Data													
GFE													
Subtotal Support				0.403									
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005					
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				RCSS						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
DT				0.206									
IOT&E				0.240									
Initial Verification Testing													
Subtotal T&E				0.446									
Remarks:													
Contractor Engineering Support				0.038									
Government Engineering Support				0.120									
Program Management Support				0.060									
Program Management Personnel													
Travel													
Labor (Research Personnel)													
Miscellaneous													
Subtotal Management				0.218									
Remarks:													
Total Cost				2.500									
Remarks:													

Exhibit R-4, Schedule Profile																								Date: February 2005																							
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name RCSS																							
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010														
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4											
Acquisition Milestones																																															
Log Demo					MS B				MS C																																						
Safety Testing												▲																																			
T&E Milestones			▲																																												
Independent Verification Test			■																																												
COTS Procurement												▲																																			
Deliveries												1	18																																		

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005					
Appropriation/Budget Activity Research, Development, Test & Evaluation, Defense-Wide, Budget Activity 5		Program Element Number and Name PE 0604709D8Z Joint Robotics Program		Project Number and Name Robotic Combat Support System (RCSS)					
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Milestone A									
Contract Preparation	1-4Q	1-4Q							
CTD Contract Award		1Q							
CTD	1-4Q	1Q							
Milestone B									
Contract Preparation	4Q								
SDD Contract Award									
SDD									
Safety Test									
Type Classification testing									
IOT&E									
COTS Procurement Contract									
Full Rate Production									
First Unit Equipped									

R-4a Schedule Profile

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Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
JOINT SERVICE EOD	0.000	3.250	1.500	2.000	2.500	3.000	3.000	3.000

A. Mission Description and Budget Item Justification:

This project supports the lifecycle management of EOD equipment for all four military Services. This project will conduct Concept and Technology Development efforts to determine maturity of existing technology and exploration of new concepts to meet EOD requirements. All four Services have the Remote Ordnance Neutralization System (RONS) fielded with their EOD users, and this program includes the RONS Continuous Improvement Program to identify, develop, and qualify improvements to the system. The Joint EOD community has a requirement for a small Man Transportable Robotic System that can conduct EOD tasks to include the use of a manipulator arm to render safe or neutralize unexploded ordnance in confined areas that current systems have difficulty accessing. Also, the Joint EOD community needs increased autonomy in its robotic platforms. The acquisition strategy for Joint Service EOD Robotics includes the conduct of an Analysis of Alternatives by the Joint users, development of a requirements document by the Joint Users, competitive solicitation of a development contract, with built-in options for production, upgrades, support and spare parts. Each Service individually funds for their production, upgrade, support, and spares.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	3.250	1.500	2.000
RDT&E Articles Quantity * (as applicable)				

FY 2005 Plans:

- Achieve Full Rate Production Decision for EOD Man Transportable Robotic System
- Complete Multiple Improvement Software Integration for RONS CIP

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	3.250	1.500	2.000
RDT&E Articles Quantity * (as applicable)				

FY 2006-2007 Plans:

- Initiate EOD Man Transportable Robotic System incremental improvements as defined in requirements document.

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- Conduct formal Analysis of Alternatives for the Next Generation of DOD EOD Robotic Systems
- Initiate Technology Development phase of Next Generation DOD EOD Robotic Systems Project

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February-2005				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				JOINT SERVICE EOD					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development						0.500		0.400				
Ancillary Hardware Development												
Systems Engineering						0.250		0.100				
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						0.750		0.500				
Remarks:												
Development Support						0.100		0.050				
Software Development						0.200		0.050				
Training Development						0.200		0.100				
Integrated Logistics Support						0.100		0.100				
Configuration Management						0.050		0.100				
Technical Data						0.100		0.100				
GFE												
Subtotal Support						0.750		0.500				
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				JOINT SERVICE EOD ROBOTICS					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT						0.400		0.200				
IOT&E						0.100		0.050				
Initial Verification Testing												
Subtotal T&E						0.500		0.250				
Remarks:												
Contractor Engineering Support						0.200		0.100				
Government Engineering Support						0.200		0.100				
Program Management Support						0.100		0.050				
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management						500.000		1.500				
Remarks:												
Total Cost						3.250		2				
Remarks:												

Exhibit R-4, Schedule Profile																									Date: February 2005											
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name Joint Service EOD Robotics												
Fiscal Year	2001				2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
MTRS PRM T&E																																				
MTRS AAP LIMITED PROD DEC																																				
MTRS FRP DEC																																				
MTRS CIP																																				
NEXT GEN EOD RS AOA																																				
NEXT GEN EOD RS TECH DEV																																				
RONS CIP																																				

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Exhibit R-4a, Schedule Detail				Date: February 2005					
Appropriation/Budget Activity Research, Development, Test & Evaluation, Defense-Wide, Budget Activity 5		Program Element Number and Name PE 0604709D8Z Joint Robotics Program			Project Number and Name Joint Service EOD Robotics				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	
MTRS PRM T&E				1Q					
MTRS AAP Limited Prod Dec				1Q					
MTRS FRP Dec				4Q					
MTRS CIP				4Q	1-4Q	1-4Q	1-4Q		
Next Gen EOD RS AOA					1-4Q				
Next Gen EOD RS Tech Dev						1-4Q	1-4Q	1-4Q	
RONs CIP				1-4Q	1-3Q				

R-4a Schedule Profile

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
GLADIATOR	0.000	12.400	9.534	7.400	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Gladiator Program is a USMC initiative based on the Joint Army-Marine Corps Tactical Unmanned Vehicle (TUV) ORD originated by the U.S. Army Infantry School. Mission Need Statement (MNS) INT 12.1.1 (dated 4 November 1993) validated the need for a tactical unmanned ground vehicle system, and the ORD was approved by the Army in August 1995 and by the Marine Corps in May 1996. Changes in Service deficiencies and required capabilities have led both Services to reevaluate the existing ORD and to initiate efforts to revise it or to approve new requirements documents for robotic systems supporting the tactical commander. The Marine Corps then initiated Change 1 to the MNS in April 2001 and a Marine Corps ORD for the Gladiator Tactical Unmanned Ground Vehicle was approved in July 2004 to support the dismounted infantry of the Marine Ground Combat Element (GCE) with the organic unmanned capability to remote combat tasks including scout/surveillance. The system will reduce risk and neutralize threats to Marines across the full spectrum of conflict and military operations. The Gladiator is a teleoperated/semi-autonomous, small-to-medium sized, highly mobile UGV with, initially, the basic capability to conduct scout/surveillance missions and to carry various mission payloads for specific tasks. It will be inherently simple, durable, multi-functional, and easily transported. In the conduct of Operational Maneuver From The Sea (OMFTS), Ship To Objective Maneuver (STOM), Sustained Operations Ashore (SOA), and Operations Other Than War (OOTW), the Gladiator will enhance the ability to accomplish assigned missions. Operating just forward of the GCE units, Gladiator will perform basic scouting/surveillance, obstacle breaching, lethal and non-lethal direct fire, logistic support, and NBC reconnaissance tasks while permitting the operator to remain covered or concealed. The basic Marine Corps system will consist of a mobile base unit (MBU), an OCU, and specific mission payload modules (MPMs). Initial MPMs will include Shoulder-launched Multi-purpose Assault Weapon (SMAW), Anti-Personnel Obstacle Breaching System (APOBS), Light Vehicle Obscure Smoke System (LVOSS), M240 and M249 Machine Guns, and current NBC detectors.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	12.400	9.534	7.400
RDT&E Articles Quantity * (as applicable)				

FY 2004 Accomplishments:

- Program remained in CTD.
- Completed detailed design of Gladiator.
- Completed Future Naval Capability demonstrations.
- Completed System Design and Development (SDD) acquisition documentation.
- Released SDD acquisition package to contractors.
- Successfully competed within the Marine Corps for Gladiator funding in the FY 06-11 POM.

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	12.400	9.534	7.400
RDT&E Articles Quantity * (as applicable)				

FY 2005-2006 Plans:

- Initiate SDD.
- Complete PDR.
- Begin preparation of MS C documentation.

C. Other Program Funding Summary:

Gladiator is a cooperative program of the Office of Naval Research and the DoD Joint Robotics Program. The ONR is responsible for funding the major portion of the technology demonstration, while the JRP continues to manage the Gladiator program through SDD to production in support of Marine Corps requirements. FNC funding, under Autonomous Operations is:

FY 2002 5.0 million

FY 2003 2.5 million

FY 2004 1.5 million

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February-2005				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				Gladiator					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development	CPFF					6.000		2.813				
Ancilliary Hardware Development												
Systems Engineering						0.500		0.223				
Licenses												
Tooling						0.585		0.052				
GFE												
Award Fees												
Subtotal Product Development				0.000		7.085		4.539				
Remarks:												
Development Support						0.500		1.000				
Software Development						0.500		1.000				
Training Development						0.500		0.400				
Integrated Logistics Support						1.315		0.400				
Configuration Management						0.500		0.061				
Technical Data												
GFE												
Subtotal Support				0.000		3.315		2.861				
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005				
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				Gladiator					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT						1.000		1.634				
IOT&E												
Initial Verification Testing												
				0.000		1.000		1.634				
Remarks:												
Contractor Engineering Support						0.500		0.100				
Government Engineering Support						0.250		0.200				
Program Management Support						0.250		0.200				
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
				0.000		1.000		0.500				
Remarks:												
Total Cost						12.400		9.534				
Remarks:												

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Exhibit R-4, Schedule Profile																								Date: February 2005																								
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name GLADIATOR																								
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010															
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4												
Acquisition Milestones	[Timeline bar with markers: MS B (triangle), MS C (triangle), FUE (star)]																																															
Prototype Phase	[Timeline bar]												MS B				MS C				FUE																											
Program Milestones																																																
Log Demo																																																
T&E Milestones																																																
Independent Verification Test																																																
DT																																																
OT																																																
IOT&E																																																
Production Milestones																																																
LRIP FY 06	LRIP start [Timeline bar]																																															
FRP FY 07	FRP start [Timeline bar]																																															
Deliveries	[Timeline bar with values: 6, 4, 30]																																															

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity Research, Development, Test & Evaluation, Defense-Wide, Budget Activity 5		Program Element Number and Name PE 0604709D8Z Joint Robotics Program		Project Number and Name Gladiator				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone A								
Contract Preparation	1-2Q							
CTD Contract Award	2Q							
CTD	2-4Q	1-4Q						
Milestone B			4Q					
Contract Preparation			2-4Q					
SDD Contract Award				1 Q				
SDD				1-4Q	1-4Q	1-4Q		
Developmental Test					3-4Q			
Log Demo							3Q	
Operational Test							2-4Q	
Milestone C						2Q		
Low Rate Initial Production						3-4Q	1-4Q	
IOT&E							2-4Q	
Full Rate Production								2Q
First Unit Equipped								3Q

R-4a Schedule Profile

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Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
MDARS-E	10.680	3.480	2.711	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The Mobile Detection Assessment Response System – Exterior (MDARS-E) will provide commanders at Army, Air Force, Navy, and Defense Logistics Agency (DLA) facilities with the capability to conduct semi-autonomous, random patrols and surveillance activities, barrier assessment, and theft detection functions. MDARS-E can be used in a variety of installations: chemical storage facilities, general storage yards; depots; Arms, Ammunition, and explosives (AA&E) storage areas; air fields; rail-yards; and port facilities. The system will autonomously conduct surveillance activities, conduct lock interrogations, and assess the status of facility barriers such as AA&E storage bunkers. Capabilities include the detection of unauthorized personnel, verification of barriers and product status, and the remote investigation of an alarm source.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	10.680	3.480	2.711	0.000
RDT&E Articles Quantity * (as applicable)				

FY 2004 Accomplishments:

- Conduct Critical Design Review
- Identify Early User Appraisal (EUA) Activities for Army and Air Force Sites.
- Deliver First Pre-Production Platforms.
- Conduct Production Qualifications Test (PQT) 1a.
- Explore Tactical/Contingency Applications.
- Continue System Integration of Sensor Technologies.
- Continue C2 Software Engineering and Test.

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	10.680	3.480	2.711	0.000
RDT&E Articles Quantity * (as applicable)				

FY 2005-2006 Plans:

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- Conduct PQT 1b.
- Conduct Early User Appraisal Training (EUA) at Hawthorne Army Depot and Nellis Air Force Base, NV.
- Conduct PQT2.
- Conduct New Equipment Training.
- Initiate Initial Operational Test and Evaluation.

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)								Date:	February 2005				
DEFENSE-WIDE BUDGET ACTIVITY 5				Program Element PE 0604709D8Z				MDARS-E					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development				10.680		3.480		2.711					
Ancilliary Hardware Development													
Systems Engineering													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development				10.680		3.480		2.711					
Remarks:													
Development Support													
Software Development													
Training Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
GFE													
Subtotal Support				0.000		0.000		0.000					
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)							Date: February 2005					
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				MDARS-E					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total Pys Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT												
IOT&E												
Subtotal T&E				0.000		0.000		0.000				
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management				0.000		0.000		0.000				
Remarks:												
Total Cost				10.680		3.480		2.711				
Remarks:												

Exhibit R-4, Schedule Profile																								Date: February 2005												
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name MDARS-E												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																				
Award SD&D Contract																																				
System Delivery																																				
EUA Training																																				
EUA/PQT2																																				
IOT&E																																				

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity RDT&E, Defense Wide/ Budget Activity 5		Program Element Number and Name PE 0604709D8Z		Project Number and Name MDARS-E				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Milestone B IPR	3Q							
Award SD&D contract		2Q						
System Delivery				2Q				
EUA Training				2Q				
EUA/PQT2								
Initiate				2Q				
Complete					2Q			
IOT&E					3Q			
Milestone C IPR						3Q		

R-4a Schedule Profile

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
NUSE2	0.000	11.844	0.000	1.029	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

NUSE² is a tightly coupled team of R&D, modeling, and simulation resources that provide the Nation with the capability to develop, evaluate, and support Unmanned Systems throughout the life cycle. NUSE² will serve the entire Unmanned Systems (UAV, UGV, USV, and UUV) community as a long-term, life cycle resource. NUSE² provides the Unmanned Systems community unprecedented capability to conduct experimentation and promote technology transfer by fostering a synergistic and synchronized relationship between government, contractors, commercial, small business, and academia with scientists, technologists, product developers, testers, and users. The focus of this effort is the successful integration of all unmanned systems to include air, ground, surface, and underwater systems and the interoperability of those unmanned systems with manned systems on the Joint battlefield.

Currently, the NUSE² team members consist of the Joint Robotics Program Managers and associates including: the RS JPO, AFRL, ARL, AMRDEC, TARDEC, Space and Naval Warfare Systems Center (SPAWAR), PM-FPS, Product Manager Robotic and Unmanned Systems (PM-RUS), the Navy Coastal Systems Station (NCSS), Program Manager (Ships)-Explosive Ordnance Disposal (PMS-EOD), and Air Armament Center's Agile Combat Support Systems Program Office (AAC/YBC), the Naval Surface Warfare Center-Crane (NSWC), and the Office of the Under Secretary of Defense's Combating Terrorism Special Operations, TSWG. These initial team members provide a wide range of facilities, terrain, and environments to support Unmanned Systems development. A goal of NUSE² is to expand team membership as the initiative gets established and matures.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	11.844	0.000	1.029
RDT&E Articles Quantity * (as applicable)				

FY 2005 Plans:

- Continue to expand NUSE2 exposure and capabilities to serve as the dedicated set of experimentation tools for Unmanned Systems.
- Conduct experimentation in the following efforts and areas:
 - Warfighter assessment of robotics technologies
 - SKISKY
 - JAUS Common OCU Experiment #3

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- REDCAR II
- Semi-autonomous Capability for RONS
- Networked Communications for UGVs
- Support of DARPA in its Grand Challenge II
- COUGAR VI

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February-2005				
DEFENSE-WIDE			Program Element				NUSE2					
BUDGET ACTIVITY 5			PE 0604709D8Z									
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Primary Hardware Development												
Ancillary Hardware Development												
Systems Engineering												
Licenses												
Tooling												
GFE												
Award Fees												
Subtotal Product Development						0.000						
Remarks:												
Development Support						3.150						
Software Development												
Training Development												
Integrated Logistics Support												
Configuration Management												
Technical Data												
GFE												
Subtotal Support				0.000		3.150						
Remarks:												

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Exhibit R-3 Cost Analysis (page 2)							Date:	February-2005					
DEFENSE-WIDE BUDGET ACTIVITY 5			Program Element PE 0604709D8Z				NUSE2						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total PYs Cost	2004 Cost	2004 Award Date	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost To Complete	Total Cost	Target Value of Contract	
DT													
IOT&E													
Experimentation Support						5.444							
Subtotal T&E						5.444							
Remarks:													
Contractor Engineering Support													
Government Engineering Support													
Program Management Support													
Program Management Personnel													
Travel													
Labor (Research Personnel)													
Miscellaneous													
Subtotal Management						0.000							
Remarks:													
Total Cost						8.594							
Remarks:													

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Exhibit R-4, Schedule Profile																								Date: February 2005												
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5												Program Element Number and Name PE 0604709D8Z – Joint Robotics Program												Project Number and Name NUSE2												
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Warfighter Assessments																▲																				
SKISKY																▲																				
J AUS OPC																				▲																
REDCAR II																				▲																
Semi-Auton RONS																				▲																
Networked Comms																								▲												
DARPA Grand Challenge																												▲								
COUGAR IV																																				

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity Research, Development, Test & Evaluation, Defense-Wide, Budget Activity 5		Program Element Number and Name PE 0604709D8Z Joint Robotics Program EMD		Project Number and Name NUSE2				
Schedule Profile	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
Warfighter Assessment				3Q				
SKISKY				3Q				
J AUS OPC #3				4Q				
REDCAR II				4Q				
Semi-Autonomous RONS				4Q				
Networked Comms for UGVs					2Q			
DARPA Grand Challenge Support				4Q				
COUGAR IV					3Q			

R-4a Schedule Profile

Exhibit R-2a, RDT&E Budget Item Justification							Date: February 2005	
APPROPRIATION/BUDGET ACTIVITY DEFENSE WIDE RDT&E BA 5				R-1 ITEM NOMENCLATURE JOINT ROBOTICS PROGRAM			PE 0604709D8Z	
COST (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
NCDR-ROBOTICS GREENHOUSE	0.000	3.250	0.000	0.000	0.000	0.000	0.000	0.000

A. Mission Description and Budget Item Justification:

The National Center for Defense Robotics (NCDR), Robotics Greenhouse will integrate and enhance robotic technologies, commands, and processes to achieve more effective navigation and operation of UGVs used for explosive ordnance disposal, physical security, reconnaissance, and other defense applications. Research and development will be conducted in three technology areas which are essential for future warfighting applications, to include 1) Platform Technologies, i.e., mobility, power, manipulation, health maintenance, and materials; 2) Interface Technologies, i.e., communications and human robot interaction; and 3) Autonomous Technologies, i.e., perception, positioning, navigation, path planning, mission planning, cooperative behaviors, learning and adaptation, and computational hardware. The successful model of the "Greenhouse Initiative" developed in Pennsylvania, in order to form an industry-led national consortium of leading corporations and research institutions to direct the future, collaborative development efforts of key enabling semi-autonomous robotics technologies and supporting disciplines, such as systems engineering skills and standards for interoperability. A key objective of the "Robotics Greenhouse" will be to develop systems engineering processes specific to robotics that optimize the trade-off between the need to accelerate the transition of technology yet at the same time addresses the need to ensure reliability, maintainability, upgradeability, and similar requirements.

B. Accomplishments/Planned Program

	FY 2004	FY 2005	FY 2006	FY 2007
Accomplishment/Effort/Subtotal Cost	0.000	3.250	0.000	0.000
RDT&E Articles Quantity * (as applicable)				

FY2005-2006 Plans:

- Identify key, enabling technologies in such areas as sensors, artificial intelligence, processors, and human/computer interaction, establish priorities and targets, bring together leading edge companies and renowned research universities to perform pre-competitive development, and coordinate licensing agreements.
- Establish the criteria, guidelines, and content for establishing robotics systems engineering education programs to be offered at designated universities leading to graduate level degrees as well as post-graduate certification on a continuing education basis.

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- Convene collaborative efforts expected to identify common needs and critical system requirements, specify key technology drivers, recommend specific standards, and produce an interoperability roadmap.

C. Other Program Funding Summary:

Not Applicable

D. Acquisition Strategy:

Not Applicable

E. Major Performers:

Not Applicable

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Exhibit R-3 Cost Analysis (page 1)							Date:	February 2005					
DEFENSE-WIDE BUDGET ACTIVITY 5				Program Element PE 0604709D8Z			NCDR- Robotics Greenhouse						
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2004 Cost	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract	
Primary Hardware Development													
Ancilliary Hardware Development													
Systems Engineering													
Licenses													
Tooling													
GFE													
Award Fees													
Subtotal Product Development													
Remarks:													
Development Support				3.250									
Software Development													
Training Development													
Integrated Logistics Support													
Configuration Management													
Technical Data													
GFE													
Subtotal Support				3.250									
Remarks:													

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Exhibit R-3 Cost Analysis (page 2)								Date: February 2005				
DEFENSE-WIDE BUDGET ACTIVITY 5				Program Element PE 0604709D8Z			NCDR Robotics Greenhouse					
Cost Categories (Tailor to WBS, or System/Item Requirements)	Contract Method & Type	Performing Activity & Location	Total 2004 Cost	2005 Cost	2005 Award Date	2006 Cost	2006 Award Date	Cost	Award Date	Cost To Complete	Total Cost	Target Value of Contract
DT												
IOT&E												
Initial Verification Testing												
Subtotal T&E												
Remarks:												
Contractor Engineering Support												
Government Engineering Support												
Program Management Support												
Program Management Personnel												
Travel												
Labor (Research Personnel)												
Miscellaneous												
Subtotal Management												
Remarks:												
Total Cost				3.250								
Remarks:												

Exhibit R-4, Schedule Profile																										Date: February 2005										
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5													Program Element Number and Name PE 0604709D8Z – Joint Robotics Program										Project Number and Name NCDR-Robotics Greenhouse													
Fiscal Year	2002				2003				2004				2005				2006				2007				2008				2009				2010			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Identify Key Technologies														▲																						
Evaluate Semi-Autonomy Capabilities														▲																						
Integration Efforts																																				
Developmental Evaluation																																				

R-4 Schedule Profile

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Exhibit R-4a, Schedule Detail					Date: February 2005				
Appropriation/Budget Activity DEFENSE WIDE RDT&E/B.A. #5		Program Element Number and Name PE 0604708DZ Joint Robotics Program			Project Number and Name NCDR-Robotics Greenhouse				
Schedule Profile	FY 2002	FY 2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	
Identify Key Technologies for Semi-Autonomy				2Q					
Evaluate Semi-Autonomy Capabilities				3Q					
Integration Efforts				3Q-4Q	1Q-4Q				
Developmental Evaluation					4Q				

R-4a Schedule Profile

EXHIBIT R-2, RDT&E Budget Item Justification							DATE: February 2005	
APPROPRIATION/BUDGET ACTIVITY RDT&E Defense-Wide/BA-5			R-1 ITEM NOMENCLATURE 0604771D8Z Common Joint Tactical Information					
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	10.133	17.619	11.075	8.050	16.796	20.688	21.021	21.510
P771 Link-16 Tactical Data Link (TDL) Transformation								
Subtotal Cost	4.956	14.287	11.075	8.050	16.796	20.688	21.021	21.510
P 773 Multifunctional Information Distribution System-Low Volume Terminal (MIDS-LVT)								
Subtotal Cost	5.177	3.332						
A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:								
<p>The P771 program was originally focused on transforming Tactical Data Links (primarily Link-16) to comply with the vision of the netcentric operations. This program has now been rescoped to address the Department's needs for joint and combined network enabled capabilities for all primary data link communications. The implementation of a network enabled capability will provide an information superiority and sharing environment that will enhance combat power by linking decisionmakers with sensors and shooters. By sharing information and using collaborative tools we will improve battlespace awareness and enable increased speed of command, a higher tempo of operations, greater lethality, increased survivability and self synchronization. This network data link capability has been identified by the Joint Requirements Oversight Council, Allied/Coalition partners and the NATO C3 board as critical to transformation of the data links. Under the P771 program, DISA, Army, Air Force, and Navy interoperable improvement efforts and processes will be funded to develop common network-enabled standards and protocols. Specifically, DISA will lead the effort to transform current data link standards to a common set of joint network enabled standards for the implementation of future wireless networking services. In addition, the P771 program will use these joint standards, protocols, and processes for implementation and testing across Global Information Grid (GIG) end-to-end programs to allow for early evaluation of these capabilities. These P771 program efforts, along with the Service funding for the Air Force led Networked Weapons concept development and the Navy led Web-Enabled Cockpit demonstration, will support the development, testing and expedited fielding of these capabilities to joint tactical warfighters. P771 funds will also assist in the development of a roadmap, strategy and migration plan to ensure network enabled data link capabilities are synchronized with the development and integration timelines of other planned network-enabled weapon systems.</p>								
<p>The 773 program supports the RDT&E associated with the MIDS-LVT hardware which is now reaching full rate production. This line is ending in FY 2005 and the Services are now integrating and procuring with their own funding. This final years funding is supporting the close out of MIDS-LVT developments and starting the migration to the JTRS. MIDS-LVT is an international cooperative program involving U.S., France, Italy, Germany and Spain designed for tactical applications and environments. MIDS provides a highly jam-resistant, secure digital (voice and data) information distribution system which enables rapid, integrated communications, navigation and identification among tactical and command and control warfare elements. MIDS-LVT is migrating to JTRS and will incorporate the WNW for enabling an interconnected end-to-end set of information capabilities in support of NCOW objectives.</p>								
<p>Program metrics will be developed in support of requests for resources. The metrics will follow the guidelines of the OSD Net-Centric Checklist and aid programs in the move into the Net-Centric environment in the GIG. Metrics will be updated as standards and protocols are approved in the Joint Technical Architecture or the NCOW RM.</p>								
<p>This program is funded under BA-5, System Development and Demonstration, because it encompasses engineering, manufacturing development, and demonstration of new end-items prior to production approval decision.</p>								

EXHIBIT R-2, RDT&E Budget Item Justification		DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE		
RDT&E Defense-Wide/BA-5		0604771D8Z Common Joint Tactical Information		
B. Program Change Summary:				
	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	10.133	18.515	18.649	18.939
Current BES/President's Budget	10.133	17.619	11.075	8.050
Total Adjustments		-0.896	-7.574	-10.889
Congressional program reductions				
Congressional rescissions, Inflation Adjustments		-0.896	0.526	0.511
Congressional increases				
Reprogrammings			-8.100	-11.400
SBIR/STTR Transfer				
C. Change Summary Explanation:				
FY 2005: IT Reduction -.463 million; Management Improvements -.056 million; General Reduction -.113 million; FFRDC -.083 million; CAAS -.181 million				
FY 2006: Non-pay purchase inflation adjustment .602 million; Contracting Support -.076; Reprogrammed to Navy -8.100 million				
FY 2007: Non-pay purchase inflation adjustment .593 million; Contracting Support -.082; Reprogrammed to Navy -11.400 million				

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY					PROJECT NUMBER AND NAME			
RDT&E Defense-Wide/BA-5					P771 Link-16 Tactical Data Link (TDL) Transformation			
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
P771 Link-16 Tactical Data Link (TDL) Transformation								
Subtotal Cost	4.956	14.287	11.075	8.050	16.796	20.688	21.021	21.510
RDT&E Articles Qty								
<p>A. Mission Description and Budget Item Justification:</p> <p>This program funds Tactical Data Enterprise Service (TDES) products which maximize interoperability across Joint Service platforms enhancing Net-Centric capabilities and ensuring an accurate exchange of real-time and near real-time tactical data information within a balanced investment framework to enhance Net-Centric warfighter capabilities. The products include approved standards, protocols, and processes for implementation and testing across programs from end-to-end including an end-to-end test bed. The end-to-end evaluation connects design/development activities to each other, sets metrics/goals for performance to measure progress, emulates and evaluates link characteristics, and provides realistic scenarios to evaluate end-to-end performance. Current Joint initiatives to achieve Net-Centric Operations and Warfare (NCOW) require tactical data transport to migrate to TDES. Tactical data transport requirements and functionalities that have been driven by operational realities into current Tactical Data Link (TDL) systems and networks will be captured and preserved into component architectures of the Global Information Grid (GIG) Enterprise in accordance with the NCOW Reference Model (NCOW RM). To this purpose, a Joint TDES Migration Team (JT MT) has been established to bring together Joint tactical communications subject matter experts from Combatant Commands, Services, and Agencies. Through a systems engineering approach, this Migration Team is designing and developing the plan and roadmap to migrate from the legacy of TDLs to NCOW enabling TDES following the NCOW RM. Through participation and collaboration with the GIG End-to-End developers, the Migration Team will identify solutions for dissemination of tactical data within the GIG Enterprise. The Team will provide insight into operationally driven, technical functionalities needed to meet tactical data exchange requirements within a critical and/or warfighting environment (e.g., survival information). Tactical Data Enterprise Services are the foundation for Net-Centric transformation in DoD and to realize the vision of the GIG. The Migration Team will plan and roadmap the migration of tactical data transport toward dependable, reliable and ubiquitous networks that eliminate stovepipes and respond to dynamics of operational scenario, bringing Power to the Edge. Examples of key technology areas include tactical IP and Transformational Waveforms as well as Operational Architectures and Concepts for future JTDL functionality. Work in Tactical IP Networks includes, implementation of TDES over IP Network through Joint Range Extension Protocol (JREAP), development of IP over data links, research and implementation of IPv6 based networks, and assessments of Quality of Service (QoS) of networks across a spectrum of operational conditions. Tactical Information Integration includes selective implementation of the multiple gateway initiatives within the GIG Enterprise. Continued development and implementation of a Link 16/data link EMC DoD Certification to allow OSD to certify operation of these links within the operational concepts of the GIG will be demonstrated. Networked Sensors, Command and Control, Shooters, and Weapons; and Combat ID applications will be evaluated. The funding increase from FY 2004 to FY 2006 is based on a transition from systems engineering studies to demonstrations of implementation of NCOW. The funding decrease from FY 2007 to FY 2008 reflects the transition from legacy TDLs to the fielding of JTRS capabilities to the warfighter and the subsequent increases will be in support of the future networked TDES.</p>								

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY RDTE Defense-Wide/BA-5		PROJECT NUMBER AND NAME P771 Link-16 Tactical Data Link (TDL) Transformation
<p>B. Accomplishments/Planned Program</p> <p>FY 2004 ACCOMPLISHMENTS (\$4.956 million):</p> <ul style="list-style-type: none"> - Coordinated multi-service Tactical Data Enterprise Service (TDES) Migration to Net-Centric Operations Warfare (NCOW) - Provided technical oversight, planning, and coordination of JTDL interoperability and transformation initiatives (e.g., Joint EMC Features DoD Performance Specification) - Coordinated Transformation Working Groups for Gateway Transformation and Joint Interoperability of Tactical Command and Control Systems (JINTACCS) Transformation - Supported IP Over Link 16 Demonstration - Provided Subject Matter Expertise (SME) for Joint, Allied, and Coalition Tactical Near-Term Interoperability and Net-Centric Transformation Initiatives - Initiated Net-Centric and Joint Weapons Network Concept of Operations (CONOPS) - Initiated SME participation and collaboration with GIG End-to-End Developers - Initiated network loading and topology study to support migration to Net-Centric Operations <p>FY 2005 PLANS (\$14.287 million):</p> <ul style="list-style-type: none"> - Develop TDES migration in support of NCOW objectives - Lead Joint team with OSD, JCS, DISA, Services, and Agencies for TDES migration - Revise and update June 2000 Joint Tactical Data Link Management Plan (JTDLMP) to TDES transformation to NCOW objectives - Publish TDES transformation to NCOW 2005 edition - Standup and lead required TDES teams to address Gateway Transformation and JINTACCS Transformation - Act as the Joint subject matter experts for Joint, Allied, and Coalition Tactical Near-Term Interoperability and Net-Centric Transformation Initiatives - Provide technical oversight, planning, and coordination of Joint TDL interoperability and transformation initiatives (e.g., Joint Electro Magnetic Compatibility Features DoD Performance Specification, Service TDES migrations) - Act as Joint TDL subject matter experts and participate with GIG End-to-End Systems Engineering teams - Execute tactical network loading and topology study to support migration to NCOW operations - Identify transformational solutions for dissemination of tactical data within the GIG Enterprise - Provide insight into operationally driven, technical functionalities needed to meet tactical data exchange requirements within a critical and/or warfighting environment (e.g., safety of life, tactical targeting) - Conduct analytic evaluations to define and plan implementation of key technologies to include tactical information integration and configuration management of messaging - Demonstrate TDES being accessible to other webservers/systems via extensible markup language (XML) translation for Advanced Waveforms initiatives - Establish program metrics that follow the OSD Net-Centric Checklist - Initiate development of approved standards, protocols, and processes for implementation and testing across programs from end to end including end-to-end testing. - Complete Joint Networked Weapons CONOPS studies and evaluations - Demonstrate Joint warfighter utilization of networked Internet Protocol (IP) data in tactical cockpits 		

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E Defense-Wide/BA-5		PROJECT NUMBER AND NAME P771 Link-16 Tactical Data Link (TDL) Transformation
<p>B. Accomplishments/Planned Program</p> <p>FY 2006 PLANS (\$11.075 million):</p> <ul style="list-style-type: none"> - Update TDES migration in support of NCOW objectives - Lead Joint team with OSD, JCS, DISA, Services, and Agencies for TDES migration - Revise and update 2005 TDES transformation to NCOW in preparation for 2007 edition - Lead required TDES teams to address Gateway Transformation and JINTACCS Transformation - Act as the Joint subject matter experts for Joint, Allied, and Coalition Tactical Near-Term Interoperability and Net-Centric Transformation Initiatives - Provide technical oversight, planning, and coordination of Joint TDL interoperability and transformation initiatives (e.g., Joint Electro Magnetic Compatibility Features DoD Performance Specification, Service TDES migrations) - Act as Joint TDL subject matter experts and participate with GIG End-to-End Systems Engineering teams - Complete tactical network loading and topology study to support migration to NCOW operations - Identify transformational solutions for dissemination of tactical data within the GIG Enterprise - Provide insight into operationally driven, technical functionalities needed to meet tactical data exchange requirements within a critical and/or warfighting environment (e.g., safety of life, tactical targeting) - Conduct analytic evaluations to define and plan implementation of key technologies to include tactical information integration and configuration management of messaging - Demonstrate TDES being accessible to other webservers/systems via extensible markup language (XML) translation for Advanced Waveforms initiatives - Update program metrics that follow the OSD Net-Centric Checklist - Continue development of approved standards, protocols, and processes for implementation and testing across programs from end to end including end-to-end testing. - Complete Joint warfighter utilization of networked Internet Protocol (IP) data in tactical cockpits 		

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY RDT&E Defense-Wide/BA-5		PROJECT NUMBER AND NAME P771 Link-16 Tactical Data Link (TDL) Transformation
<p>B. Accomplishments/Planned Program</p> <p>FY 2007 PLANS (\$8.050 million):</p> <ul style="list-style-type: none"> - Update TDES migration in support of NCOW objectives - Lead Joint team with OSD, JCS, DISA, Services, and Agencies for TDES migration - Revise and update 2007 TDES transformation to NCOW - Lead required TDES teams to address Gateway Transformation and JINTACCS Transformation - Act as the Joint subject matter experts for Joint, Allied, and Coalition Tactical Near-Term Interoperability and Net-Centric Transformation Initiatives - Provide technical oversight, planning, and coordination of Joint TDL interoperability and transformation initiatives (e.g., Joint Electro Magnetic Compatibility Features DoD Performance Specification, Service TDES migrations) - Act as Joint TDL subject matter experts and participate with GIG End-to-End Systems Engineering teams - Identify transformational solutions for dissemination of tactical data within the GIG Enterprise - Provide insight into operationally driven, technical functionalities needed to meet tactical data exchange requirements within a critical and/or warfighting environment (e.g., safety of life, tactical targeting) - Conduct analytic evaluations to define and plan implementation of key technologies to include tactical information integration and configuration management of messaging - Update program metrics that follow the OSD Net-Centric Checklist - Continue development of approved standards, protocols, and processes for implementation and testing across programs from end to end including end-to-end testing. - Develop CONOPS for networking waveforms Unmanned Air/Ground/Maritime Vehicles - Joint C4I Exercise participation to demonstrate warfighter net-centric capabilities <p>C. Other Program Funding Summary: N/A</p> <p>D. Acquisition Strategy: In executing JTDL tasking, existing cost-plus contracts will be utilized.</p> <p>E. Performance Metrics: Program metrics will be developed in support of requests for program resources. The metrics will follow the guidelines of the OSD Net-Centric Checklist and aid programs in the move into the Net-Centric environment in the GIG. Metrics will be updated as standards and protocols are approved in the Joint Technical Architecture or the NCOW RM.</p>		

EXHIBIT R-3, Cost Analysis										DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E Defense-Wide/BA-5			PROGRAM ELEMENT 0604771D8Z				PROJECT NUMBER AND NAME P771 Link-16 Tactical Data Link (TDL) Transformation					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
Spectrum Support		Various	11.248	1.000	Various	1.000	Various	1.000	Various	Continuing	Continuing	Continuing
Data Link Migration Engineering Support		Various	14.227								14.227	
Net-Centric Systems Engineering		Various	0.000	1.604	Various	3.030	Various	0.980	Various	Continuing	Continuing	Continuing
GIG Engineering Support		Various	3.982	2.700	Various						6.682	
Enhancements		Various	0.626								0.626	
JICO Toolset (JSS) Development		Various	0.529								0.529	
Joint Initiatives		Various	2.157			2.000	Various	1.000	Various	Continuing	Continuing	Continuing
Joint TDES Migration and Technology Insertion Plan		Various	1.860	4.232	Various	5.045	Various	5.070	Various	Continuing	Continuing	Continuing
Joint and International Engineering		Various	0.100	2.591	Various						6.391	
Weapons Networks		Various	0.323	1.080	Various						1.403	
Web Enabled Cockpit		Various	0.200	1.080	Various						1.280	
Subtotal Product Development			35.252	14.287		11.075		8.050				
Remarks:												
Total Cost			35.252	14.287		11.075		8.050		0.000	0.000	0.000

EXHIBIT R-4, Schedule Profile																	DATE: February 2005															
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
RDT&E Defense-Wide/BA-5					0604771D8Z Common Joint Tactical Information										P771 Link-16 Tactical Data Link (TDL) Transformation																	
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TDES migration to NCOW								Publish 2005 △				Draft 2007 △				Publish 2007 △				Draft 2009 △				Publish 2009 △				Draft 2011 △				Publish 2011 △
GIG End-to-End Testbed				Initiate △				Operational △																								
Joint Web Enabled Cockpit				Initiate △				Airborne Demonstration △				Joint C4I Exercise △																				
Joint Networked Weapons Concept of Operations				Initiate △				CONOPS △																								
Joint Networked Unmanned Air/Ground/Maritime Vehicles																Initiate △				CONOPS △				Lab Demonstration △				Flight Demonstration △				
Net-Centric Checklist Metrics				Initial △				Update △				Update △				Update △				Update △				Update △				Update △				Update △

EXHIBIT R-2a, RDT&E Project Justification						DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY					PROJECT NUMBER AND NAME			
RDT&E Defense-Wide/BA-5					P773 MIDS-LVT			
COST (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
P773								
Subtotal Cost	5.177	3.332						
RDT&E Articles Qty								
<p>A. Mission Description and Budget Item Justification</p> <p>MIDS-LVT is a joint cooperative program involving U.S., France, Italy, Germany and Spain designed for tactical combat applications and environments. MIDS provides a highly jam-resistant, secure digital (voice and data) information distribution system, enabling rapid integrated communications, navigation, and identification among tactical and command and control warfare elements. MIDS-LVT is migrating to MIDS-JTRS incorporating the Wideband Networking Waveform (WNW) enabling globally interconnected end-to-end set of information capabilities, associated processes, and personnel for collecting, processing, storing, disseminating, and managing information on demand to warfighters, policy makers, and support personnel in a Net-Centric environment.</p> <p>B. Accomplishments/Planned Program:</p> <p>FY 2004 ACCOMPLISHMENTS (\$5.177 million)</p> <ul style="list-style-type: none"> Achieved Milestone III Full Rate Production for the USN Extended Phase 2A Specification Development efforts with DLS, ViaSat and EuroMIDS to include Preliminary Design, Software reviews and mock-ups Awarded Phase 2B Design, Development, Fabrication and Qualification contracts Initiated companion tactical data link studies, systems engineering analyses, and test and evaluation efforts <p>FY 2005 PLANS (\$3.332 million)</p> <ul style="list-style-type: none"> Continue Phase 2B development, test, and certification efforts (PDR, CDR) 								

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY RDT&E Defense-Wide/BA-5		PROJECT NUMBER AND NAME MIDS-LVT P773		
C. Other Program Funding Summary				
	FY 2004	FY 2005	FY 2006	FY 2007
Procurement				
APN				
BLI 052500	46.600	48.900	41.300	46.300
BLI 014500	10.794	10.962	11.088	11.214
BLI 055100	3.100	2.900	1.200	
OPN				
BLI 261400	5.709	1.029	2.996	
APF				
PE 0207133F	23.600	22.200	22.300	19.100
Proc,DW				
PE 0208864C/5C				
PE 0208861C		1.500	1.800	3.300
OPA				
PE 0528992A	2.100	1.800	0.900	1.200
Related RDT&E				
PE 0205604N	4.778			
PE 0604280N	18.200	23.000	12.000	
SCN - Funding for MIDS hardware is not separately identified in the SCN budget exhibits				

EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2005
APPROPRIATION/BUDGET ACTIVITY	PROJECT NUMBER AND NAME	
RDT&E Defense-Wide/BA-5	P773 MIDS-LVT	
<p>D. Acquisition Strategy:</p> <p>USD(AT&L) approved the FY00 procurement of MIDS terminals based on the favorable LRIP DAB review on 27 April 2000. The approval included procurement of 70 MIDS terminals and associated spares and an additional 11 terminals for emergent lab and test requirements. This decision was consistent with the Acquisition Strategy Report (ASR) approved by USD(AT&L) in November 1999. The FY00 MIDS LRIP terminals were equitably split between the two US-led contracts. FY 2001 and out-year quantities are being competitively procured. USD(AT&L) has directed that after completion of the US-led and European-led MIDS terminal production qualification efforts, the production requirements of all MIDS participants will be combined and competed among the US and European qualified MIDS manufacturers. For LRIP Lot 2, on 10 August 2001 the OIPT met and approved a two-phased LRIP buy and recommended to USD(AT&L) to proceed with the acquisition without a formal DAB. The first phase was approved for 59 terminals and spares in September 2001. The second phase provided for 60 terminals and emerging requirements, and occurred in November 2001 after USD(AT&L) reviewed DOT&E's assessment. For LRIP Lot 3, USD(AT&L) authorized the procurement of 208 MIDS terminals, plus spares and emergent requirements on 11 June 2002, and delegated the MS III Full Rate Production decision scheduled for July 2003 to ASN(RD&A). The LRIP Lot 3 ADM was signed 26 June 2002. A Program Decision Meeting held 25 Sep 2003 with ASN(RD&A) resulted in a Full Rate Production decision for the MIDS-LVT(2) Army unique variant and FRP for the USAF MIDS-LVT. The USN only received LRIP Lot 4 authority with direction to resolve open F/A-18 MIDS deficiencies prior to the next planned contract award. The ADM was signed 8 Dec 2003. A second Program Decision Meeting held 15 June 2004 with ASN(RD&A) resulted in a Full Rate Production decision for the USN MIDS-LVT. The ADM was signed 18 June 2004. All MIDS-LVT variants have achieved FRP and the program has successfully achieved MS III. MIDS-JTRS migration through ECP to MIDS-LVT contract was initiated 23 Dec 2004.</p>		

EXHIBIT R-3, Cost Analysis										DATE: February 2005		
APPROPRIATION/BUDGET ACTIVITY				PROGRAM ELEMENT			PROJECT NUMBER AND NAME					
RDT&E Defense-Wide/BA-5				0604771D8Z			P773 MIDS-LVT					
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Product Development												
Hardware/Software Development	CPIF	MIDSCO, Wayne, NJ	192.440								192.440	192.440
Pre-Operational EMD Terminal Support	CPIF	MIDSCO, Wayne, NJ	2.706								2.706	2.706
Software Support	FFP	BAE Systems, Wayne, NJ	3.976								3.976	3.976
EMD Spares	FFP	ViaSat, Carlsbad, CA	0.627								0.627	0.627
MIDS JTRS Migration Study	FFP	DLS, Cedar Rapids, IA	0.501								0.501	0.501
MIDS JTRS Migration Study	FFP	ViaSat, Carlsbad, CA	0.604								0.604	0.604
MIDS JTRS Specification Development	FFP	DLS, Cedar Rapids, IA	1.500								1.500	1.500
MIDS JTRS Specification Development	FFP	ViaSat, Carlsbad, CA	1.360								1.360	1.360
MIDS JTRS Design, Development, Qual	CPIF	DLS and ViaSat	5.522	3.332	Mar-05						8.854	8.854
Subtotal Product Development			209.236	3.332		0.000		0.000		0.000	212.568	212.568
Remarks: The MIDSCO EMD contract period of performance ended 30 June 2000 with the exception of contract closeout activity. A new System Engineering and Integration (SE&I) contract was awarded in June 2000 to complete unfinished EMD work scope and to provide continued EMD terminal support.												
Support												
Production Readiness Mfg Prototyping	FFP	Allied Signal, Teterboro, NJ	3.189								3.189	3.189
Production Readiness Mfg Prototyping	FFP	ViaSat, Carlsbad, CA	6.346								6.346	6.346
Production Readiness Mfg Prototyping	FFP	DLS, Cedar Rapids, IA	1.000								1.000	1.000
Production Readiness Mfg Prototyping	FFP	Thompson, Cedex, France	1.000								1.000	1.000
Production Readiness Agreements	WX	SSC SD, San Diego, CA	0.795								0.795	0.795
Subtotal Support			12.330	0.000		0.000		0.000		0.000	12.330	12.330
Remarks:												
Test & Evaluation												
System Engineering	WX	SSC SD Code 64, San Diego, CA	7.818								7.818	7.818
System Engineering	WX	SSC SD Code 45, San Diego, CA	9.465								9.465	9.465
Software Support	MIPR	Warner Robins AFB, Robins, GA	2.635								2.635	2.635
System Engineering	MIPR	MITRE, Ft. Monmouth, NJ	3.835								3.835	3.835
System Engineering and Integration	FFP	BAE Systems, Wayne, NJ	20.372								20.372	20.372
System Engineering	Various	Various	16.687								16.687	16.687
MIDS JTRS Migration	WX	Various	0.664								0.664	0.664
Joint Interoperability Certification Testing	MIPR	JITC, Ft. Huachuca, AZ	0.150								0.150	0.150
Homeland Defense	IPR	WBB, Vienna, VA	0.055								0.055	0.055
Homeland Defense	IPR	MATCOM, Alexandria, VA	0.130								0.130	0.130
Subtotal T&E			61.810	0.000		0.000		0.000		0.000	61.810	61.810
Remarks:												
Management Services												
Program Management Support	FFP	Vredenburg, Carlsbad, VA	2.306								2.306	2.306
Miscellaneous Program Support	FFP/WX	Various	10.419								10.419	10.419
Contract Services	MIPR	AF Pentagon, Washington, DC	1.400								1.400	1.400
Subtotal Management Services			14.125	0.000		0.000		0.000		0.000	14.125	14.125
Remarks:												
Total Cost			297.500	3.332		0.000		0.000		0.000	300.832	300.832

EXHIBIT R-4, Schedule Profile																	DATE: February 2005															
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME																	
RDT&E Defense-Wide/BA-5					0604771D8Z Common Joint Tactical Information										P773 MIDS-LVT																	
Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Production Milestones			▲ MS III FRP USN																													
Production Deliveries		■ Lot 2 (162)																														
MIDS-LVT Software Deliveries		▲ 6.03 ER 2B	▲ 6.04 ER 2C	▲ 6.05 ER 2D	▲ 6.06 ER 2E	▲ 6.07 ER 2F	▲ 6.08 ER 2G	☆ Block Cycle 3																								
Platform Integration			◆ FRP																													
F/A-18																																
F-16		▲ IOT&E		▼ IOC																												
MIDS JTRS Migration	▲ Phase 2A Extension		▲ Phase 2B		△ PDR		△ CDR		△ TRR	■ FAQT																						

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EXHIBIT R-4a, Schedule Detail				DATE: February 2005				
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT			PROJECT NUMBER AND NAME				
RDT&E Defense-Wide/BA-5	0604771D8Z			P773 MIDS-LVT				
Schedule Profile	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Milestones								
Navy MS III Full Rate Production	3Q							
System Engineering & Integration Deliveries								
S/W Block Cycle 3		2Q						
T&E Milestones								
F-16 IOT&E and IOC	2Q/4Q							
MIDS JTRS Migration								
Phase 2A Extension: Specification Development	1Q							
Phase 2B: Design, Development, Fabrication and Qualification	4Q							
System Development	4Q			1Q				
Software Specification Review		1Q						
Preliminary Design Review (PDR)		1Q						
Critical Design Review (CDR)		4Q						
Quality Design and Build			1Q, 2Q					
Test Readiness Review (TRR)			2Q					
Contractor Testing			3Q					
Government Testing			4Q					
Functional Configuration Audit				1Q				
Physical Configuration Audit				4Q				
Production Verification Unit Delivery				1Q, 2Q				
Production Transition Unit Delivery				2Q, 3Q				
Test and Evaluation								
F/A-18 Plug & Play (Link-16, TACAN and Voice only)								
Technical Evaluation (TECHEVAL)				1Q				
Operational Evaluation (OPEVAL)				2Q, 3Q				
Full Rate Production Decision					1Q			
First Deployment					2Q			
E-2C 4-Channel Capability								

Exhibit R-2/R-2a, RDT & E Budget Item Justification								February 2005	
Appropriation/Budget Activity Engineering and Manufacturing Development RDT&E, DW, Budget Activity: 5					Item Nomenclature Business Modernization & Systems Integration PE 0605016D8Z				
Cost (\$ in Millions)	Prior Years	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost	161.712	47.995	47.507	75.987	77.180	102.703	102.411	103.906	106.317

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT

The Business Management Modernization Program (BMMP) is responsible for the development and sustainment of Department of Defense (DoD) wide business enterprise architecture and the business process re-engineering across all DoD business areas. The architecture will serve as a “blueprint” to guide and constrain investments in financial management operations and systems. The new architecture is a high priority for the Secretary of Defense and is required for the Department to have timely, accurate and reliable financial data for use in making effective management decisions and achieving favorable audit opinions on financial statements.

BMMP is a broad and comprehensive transformation initiative – its scope encompasses the defense policies, processes, people, and systems that guide, perform, and support all aspects of business management within the Department. Specifically, the goal of BMMP is to improve DoD business operations in which relevant, reliable, and timely business information, affirmed by clean audit opinions, is available on a routine basis to support informed decision-making at all levels throughout the Department.

In accordance with the National Defense Authorization Act for FY 2005, the Secretary established the Defense Business Systems Management Committee (DBSMC), chaired by the Deputy Secretary of Defense with the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) as the Vice Chair. The DBSMC will provide recommendations to the Secretary that will ensure the use of common decision criteria for DoD business system modernization to align business transformation to Warfighter capabilities and objectives. The Vice Chair will provide acquisition oversight of the Department’s business transformation efforts along with the four appointed Approval Authorities for defense business systems; USD (AT&L), USD (Personnel and Readiness), USD (Comptroller), and Assistant Secretary of Defense (Networks and Information Integration). The DBSMC is under charter as defined by Section 186 of USC Title 10. Convening in February, the DBSMC will comply with the March 15, 2005 reporting requirements mandated. Within that reporting, the DBSMC will identify that the Approval Authority Investment Review Boards (IRBs) have convened and that a threshold criteria for the review and certification of Defense Business Systems has been established. In setting up the IRBs, the DBSMC will conduct a formal review of the Defense Business Systems Modernization Program’s accomplishments to date; and review and ratify new program objectives, structure and baseline. The Program is on track to comply with all aspects of the law by September 30, 2005.

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Program Accomplishments and Plans/New Starts:

FY 2004:

1. Completed and Released BEA version 2.2 2004, which includes the following features:
 - An Enterprise Business Process Model (EBPM) describing the end-to-end business process for the DoD. These are augmented by the requirements, business rules and data objects required to support a sustainable unqualified audit opinion. The EBPM provides an unprecedented view of processes across the enterprise and reveals inter-domain dependencies and the constraints placed by one domain on the business operations of another. It incorporates 1,079 Federal Accounting Standards Advisory Board (FASAB) requirements and 4,265 public law requirements into a single, authoritative voice. These requirements will drive future business system investments and configurations, and correct deficiencies needed to systemically support and sustain an unqualified audit opinion.
 - Captures end-to-end business processes in a readable, graphical representation, and represents the To-Be operational view as a series of business steps that will be executed in sequence (i.e., processing military payroll or a contractor invoice) in response to a defined business event, to produce a specific business result. This end-to-end view identifies the commonality among DoD processes and enables DoD to eliminate unnecessary work through simplification and standardization. Developed a DoD Financial Management Balanced Scorecard to measure problem areas and focus on corrective actions. Improvements have been in the following areas:
 - Reduced Travel Card Delinquencies for Individual Billed Accounts by 54 percent since FY 2001, and saved \$15.1 million.
 - Reduced interest penalties paid to contractors by 22 percent from \$36.3 million in FY 2001 to \$28.3 million in FY 2004, thereby reducing unnecessary expenditures of government funds.
 - Reduced backlog of payments to contractors by 72 percent since FY 2001, reducing interest penalties paid and increasing contractor satisfaction.
 - Reduced payment-recording errors by 77 percent since FY 2001, resulting in a more accurate financial position and less staff time wasted doing rework
 - Identifies data objects (for example, payroll identification number or invoice number) that must be exchanged between process steps. This will ensure that information needed by each process is created and tracked from inception to application. This visibility will eliminate the need to issue extensive and costly data calls to re-create information due to a lack of integration between the process owner and information consumer. Absorbed the Department of Energy as an e-Payroll customer in direct support of the President's Management Agenda e-Government Initiative, thereby demonstrating that we have an effective and efficient civilian payroll process.
2. Reengineered the Department's funds distribution process and budget execution process. The Business Process Reengineering (BPR) resulted in standard business processes that incorporate leading practices from both government and industry. The results of the BPR were documented in the Business Enterprise Architecture (BEA) that will be used to define the requirements for a Commercial off the Shelf (COTS) system solution(s). (\$1.611 million)
3. Implemented the Defense Travel System at 77 DoD sites in FY 2004, resulting in reduced workload and increased efficiency

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associated with managing travel-related activities.

4. Reengineered the Department's real property inventory process with a focus on data standardization. The BPR resulted in standard business processes that incorporate leading practices from both government and industry. The results of the BPR were documented in the BEA. (\$2.9 million)
5. Initiated a specific process to control spending on the development and modernization of business systems and to ensure that we spend funds on systems that comply with the enterprise architecture. In FY 2004, we reviewed 56 systems having a combined development/modernization budget value of \$0.6 billion that represented approximately 34 percent of the FY 2004 development/modernization budget for DoD business systems (\$1.8 billion).
6. Achieved six unqualified and one qualified audit opinions on the Department's subordinate financial statements in FY 2004.

FY 2005:

1. Continue the first of three increments initiated in January of FY2005. Increment 1 is focused on key financial aspects of DoD business processes. It will deliver an unqualified audit opinion in 2007 through a combination of system changes and manual work arounds in the early implementation stages. Business Modernization and Systems Integration (BMSI) will extend the Business Enterprise Architecture (BEA) in conjunction with the Domain efforts to develop detail data and process re-engineering. Increment 1 will consist of three major objectives.

Unqualified Audit Opinion (Objective 1.1)

- Provide capability to enable an unqualified audit opinion on 2007 consolidated DoD financial statements
- Evolve DoD-wide reference models towards operational support to the warfighter

Asset Accountability (Objective 1.2)

- Provide capability to enable asset accountability (Achieve total visibility and accurate valuation of assets to include Operating, Materials and Supplies (OM&S); Inventory; and Property, Plant, and Equipment (PP&E).
- Evolve DoD-Wide reference models towards operational support to the warfighter

Total Personnel Visibility (Objective 1.3)

- Accurately track the percentage of DoD personnel on home assignment, in mobilization, and on Temporary Duty (TDY)
- Includes military service members, civilian employees, military retirees, and other U.S. personnel in theater of operations.
- Established a consolidated information technology repository to focus on the major information technology (IT) business systems to help us control system investments and prevent unnecessary IT spending. The repository contains 362 systems that represent 54 percent (\$2.8 billion) of the total FY 2005 budget for DoD business systems (\$5.2 billion). (including contractors and other Federal employees).

2. Continue and complete the development of the BEA version 2.3, which will include the following features:

- Finish the remaining Federal requirements and business rules; start the DoD requirements
- Update the Enterprise Data Model (OV-7) and integrate the DoD Enterprise Architecture (EA) Data Reference Model (DRM) subject

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areas with the BEA Conceptual Data Model

- Integrate activity models/information exchanges/operational nodes with the Enterprise Business Process Model (EBPM) as a decomposition of the Federal Enterprise Architecture (FEA) Business Reference Model (BRM), leveraging activity details from BEA v2.0 and business capabilities, and integrated with the EBPM and the OV-7
 - Update systems interface descriptions and systems functions
 - Update the technical standards profile, the technical standards forecast, and the systems technology forecast
 - Update the mapping of the BEA to the Global Information Grid (GIG) and the FEA
 - Update the Business Mission Area portions of the DoD EA Reference Model
3. Start and complete Increment 2, which seeks to:
- Align acquisition practices with government and industry best practices
 - Achieve total asset visibility and accurate valuation of assets
 - Enhance force management through position accountability and visibility (military and civilian)
 - Improve military health care delivery through a more efficient healthcare claims system, more accurate patient diagnostic coding, and joint medical material asset visibility
 - Improve environmental safety and occupational health
4. Start and complete the development of BEA version 2.4, which includes:
- Finish the remaining DoD requirements
 - Update Technology Standard
 - Update the OV-7
 - Update activity models / information exchanges / operational nodes
 - Update systems interface descriptions and systems functions
 - Update BEA products consistent with each other, providing an integrated view of the BEA
 - Update the mapping of BEA to the GIG and the FEA
 - Update the Business Mission Area portions of the DoD Enterprise Architecture Reference Models in line with BEA v2.4

FY 2006:

1. Start and complete Increment 3, which seeks to:
- Implement Planning, Programming, Budgeting and Execution (PPBE) process improvements in accordance with Joint Defense Capabilities Study recommendations for a capabilities-based PPBE process
 - Achieve integrated total force management
 - Improve installation management

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B. Program Change Summary	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
FY 2005 President's Budget	49.578	94.767	93.354	95.160
FY 2006/FY 2007 President's Budget	47.995	47.507	75.987	77.180
Total Adjustments	-1.763	-49.260	-17.367	-17.980
Congressional Adjustments(Distributed)		-45.000		
Congressional Adjustments(Undistributed)		-4.260		

Current Budget Submit/Budget Estimate

Program Change Summary Explanation: The FY 2006 current President's Budget Request of \$75.99 million reflects a decrease of \$17.37 million from the FY 2005 President's Budget as the resources have been realigned to the following initiatives:

- Development of the Defense Acquisition Domain Sourcing (DADS) to provide an integrated business environment that will allow the Department to transition to enterprise application services to efficiently and effectively manage the DoD supply chain.
- Joint Financial Management Improvement Program (JFMIP) compliant Defense Enterprise Accounting and Management System (DEAMS) initiative planned to support accounting for working capital funds at the USTRANSCOM and Air Force.

Schedule: Maintenance of the Department-wide BEA, perform Business Process Modeling (BPM) and integration Domain Business Process Engineering into the BEA.

Technical: Not Applicable

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: The strategy will be to contract with the private sector for required effort, to include public accounting firms.

E. Performance Metrics: The performance metrics for these resources are separately addressed in the Exhibit 300, Part 1.C. Performance Goals and Measures. A separate exhibit is also included in the FY 2006 President's Budget in support of the Program Assessment Rating Tool.

Additional performance metrics, other than those reported, are currently under development.

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Exhibit R-3, RDT & E, DW Project Cost Analysis										Date: February 2005		
Appropriation: RDT&E, DW, Budget Activity: 5						Program Element: 0605016D8Z				Business Modernization & Systems Integration		
Cost Categories	Contract Method & Type	Performin g Activity & Location	Total FY PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Perform Business Process Modeling and Integration of Domain Business Process Re- engineering efforts	Competitive Blanket Purchase Agreement	BMSI	200.607	42.990	Feb 05	68.388	Oct 05	69.462	Oct 06	373.803	755.250	755.250
Independent Verification and Validation and OCI functions; Risk assessment; Systems Engineering Support	Competitive Time & Material	BMSI	5.800	1.899	Oct 04	3.040	Oct 05	3.087	Oct 06	16.614	30.440	30.440
Consolidated Testing Support	Competitive Time & Material	BMSI	3.300	2.618	Feb 05	4.559	Dec 05	4.631	Dec 06	24.920	40.028	40.028

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Exhibit R-4, Schedule Profile																							Date: February 2005													
Appropriation: RDT&E, DW, Budget Activity: 5												Program Element: 0605016D8Z											Business Modernization & Systems Integration													
Fiscal Year	2003				2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Develop Business Enterprise Architecture 1.0					△																															
Develop BEA 2.0					△																															
Increment 1 -					■																															
Develop BEA 2.1						△																														
Develop BEA 2.2							△																													
Develop BEA 2.3								△																												
Develop BEA 2.4										△																										
Increment 2 -									■			■																								
Develop BEA 3.0											△																									
Increment 3 -													■																							

R-4 Schedule Profile -

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Exhibit R-4a, Schedule Detail				Date: February 2005				
Appropriation/Budget Activity RDT&E, DW, Budget Activity: 5	Program Element Number and Name 0605016D8Z Business Modernization & Systems Integration			Project Number and Name 016 Business Management System Improvement				
Schedule Profile	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011
Business Enterprise Architecture (BEA) 1.0	Start 3Q 03 End 1Q 04							
BEA 2.0	Start 3Q 03 End 1Q 04							
Increment 1	Start 1Q End 4Q							
BEA 2.1	Start 1Q, End 2Q							
BEA 2.2	Start 1Q, End 3Q							
BEA 2.3	Start 1Q End 3Q							
BEA 2.4	Start 1Q	End 1Q						
Increment 2		Start 1Q End 4Q						
BEA 3.0		Start 1Q- End 2Q						
Increment 3			Start 1Q End 3Q					

R-4a Schedule Profile -

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Exhibit R-2/R-2a, RDT&E Budget Item Justification								February 2005	
Appropriation/Budget Activity Engineering and Manufacturing Development RDT&E, DW, Budget Activity: 5					100 Item Nomenclature: Acquisition - Core Business Mission Area PE 0605019D8Z				
Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		0	2.100	3.600	3.100	0	0	0	0

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT

The Business Management Modernization Program (BMMP) Core Business Mission Areas were established as part of the program’s governance approach. The mission of the Core Business Mission Areas is to lead business process transformation through business process reengineering (BPR) and system integration. The Acquisition (AQ) Core Business Mission Area leads the transformation to strategic acquisition by integrating the people, processes, and technologies required implementing a modern acquisition environment that supports the Warfighter’s needs.

In accordance with the National Defense Authorization Act for FY 2005, the Secretary established the Defense Business Systems Management Committee (DBSMC), chaired by the Deputy Secretary of Defense with the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) as the Vice Chair. The DBSMC will provide recommendations to the Secretary that will ensure the use of common decision criteria for DoD business system modernization to align business transformation to Warfighter capabilities and objectives. The Vice Chair will provide acquisition oversight of the Department’s business transformation efforts along with the four appointed Approval Authorities for defense business systems; USD (AT&L), USD (Personnel and Readiness), USD (Comptroller), and Assistant Secretary of Defense (Networks and Information Integration). The DBSMC is under charter as defined by Section 186 of USC Title 10. Convening in February, the DBSMC will comply with the March 15, 2005 reporting requirements mandated. Within that reporting, the DBSMC will identify that the Approval Authority Investment Review Boards (IRBs) have convened and that a threshold criteria for the review and certification of Defense Business Systems has been established. In setting up the IRBs, the DBSMC will conduct a formal review of the Defense Business Systems Modernization Program’s accomplishments to date; and review and ratify new program objectives, structure and baseline. The Program is on track to comply with all aspects of the law by September 30, 2005.

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Accomplishments/Planned Program:

FY 2005:

1. Funds are being used for specific program functionality changes in order to facilitate consolidation or retirement of specific information systems.
2. Wide Area Workflow engineering changes will increase deployment of this system to additional users, assist in the capture of Unique Identification and Radio Frequency Identification data, and help the Military equipment valuation data capture linking multiple systems together using WAWF as the hub.
3. Changes to the system will facilitate elimination of other current forms of DoD electronic invoice and receipt processing such as the WINS system.
4. Funds additionally will be used to merge two service level systems Electronic Document Access (EDA) and Navy Air Force Interchange (NAFI) into one system for all services to use. Changes to one system must accommodate functionality that the other formerly performed.

Accomplishments/Planned Program:

FY 2006:

1. Funds will continue to be used for system changes as part of the DoD portfolio management process with regard to merger or consolidation of systems based on duplicate capability.
2. Standard Procurement System will incur some functionality adjustments based on the migration to the new Federal Procurement Data System -Next Generation.
3. This new system is mandatory for all Federal agencies and requires the shut down of multiple feeder systems from DoD agencies. Functionality must be included in SPS to shut down the systems.
4. Funds will also be used to incorporate strategic sourcing functional capability in existing systems. Currently there are multiple agencies with portions of this capability (Army, Navy, Air Force etc) that need to be merged or consolidated into a single capability delivery vehicle.

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B. Program Change Summary	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget		0	0	0
FY 2006/FY 2007 President's Budget		2.100	3.600	3.100
Total Revised Estimate	0	2.100	3.600	3.100

Current Budget Submit/Budget Estimate

Funding: New Start

Schedule: Business process reengineering was started following completion of the first version of the BEA. The reengineering will be on-going in an incremental approach consistent with the increments of BMMP. All results will be documented in updates to the BEA.

Technical: Not Applicable

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: Program will make use of competed vehicles or internal resources. The strategy will be to competitively contracted with the private sector for required effort. Additional details about the Acquisition Strategy are listed in the Exhibit 300/Modified 300.

E. Performance Metrics: The performance metrics for these resources are separately addressed in the Exhibit 300/Modified 300.

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Exhibit R-3, RDT & E, DW Project Cost Analysis										Date: February 2005		
Appropriation: RDT&E, DW, Budget Activity: 5					Program Element: 0605019D8Z					Acquisition Core Business Mission Area		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
WAWF Eng Changes	Interagency Agreement	OSD	0	2.1	Mar 2005	0	0	0	0	2.1	2.1	2.1
SPS Eng Changes	Time and Material					3.6	Oct 2005	0	0	3.6	3.6	3.6
Additional System Eng Changes	Time and Material							3.1	Oct 2006	3.1	3.1	3.1

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R-4 Schedule Profile - Item No. 20-3 of 20-4

Exhibit R-4, Schedule Profile																							Date: February 2005													
Appropriation/Budget Activity RDT&E, DW, Budget Activity: 5											Program Element Number and Name 0605019D8Z Acquisition Core Business Mission Area											Project Number and Name Acquisition Core Business Mission Area														
Fiscal Year	2001				2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
WAWF Eng Changes																																				
Merge Electronic Document Access (EDA) and Navy Air Force Interchange (NAFI)																																				
SPS Eng Changes																																				
Additional System Eng Changes																																				

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R-4a Schedule Profile - Item No. 20-4 of 20-4

Exhibit R-4a, Schedule Detail				Date: February 2005					
Appropriation/Budget Activity RDT&E, DW, Budget Activity: 5		Program Element Number and Name 0605019D8Z Acquisition Core Business Mission Area			Project Number and Name Acquisition Core Business Mission Area				
Schedule Profile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	
WAWF Eng Changes				1Q					
Merge Electronic Document Access (EDA) and Navy Air Force Interchange (NAFI)				1Q					
SPS Eng Changes					1Q				
Additional System Eng Changes						1Q			

Exhibit R-2, RDT&E Budget Item Justification						Date: February 2005		
Appropriation/Budget Activity RDT&E Defense-Wide, BA 5				R-1 Item Nomenclature: Trusted Foundry PE 0605140D8Z				
Cost (\$ in millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		30.000	31.655	41.860	44.189	42.444	42.260	42.364

A. Mission Description and Budget Item Justification:

The Department of Defense (DoD) and National Security Agency (NSA) require state-of-the-art microelectronics parts for incorporation into systems to satisfy existing and future DoD and NSA Information Assurance Directorate (IAD) and Signal Intelligence Directorate (SID) programs. The Director, NSA, has provided a mandate to continue operation of wafer manufacturing and mask-making in the Special Processing Laboratory (SPL), at least through FY 2006, to produce custom microelectronic parts for DoD/NSA and other external government consumers. The cost estimate to initially upgrade the SPL to keep pace with next generation NSA requirements is \$1.7 billion. The estimate is beyond NSA's means. Advanced technology semiconductors are integral to a range of important capabilities and defense systems. Indeed, secure communications and cryptographic applications depend heavily upon high performance semiconductors where a generation of improvement can translate into a significant force multiplier and capability advantage. Important defense technology investments and demonstrations carry size, weight, power, and performance goals that can only be met through the use of the most sophisticated semiconductors. The SPL is not currently able to provide this cutting edge level of product, nor is it cost effective to incorporate the necessary improvements to attain such performance. Therefore, NSA has looked to commercial sources to satisfy their requirements. At the same time these needs have escalated, a variety of technical and economic pressures have eliminated many domestic on-shore suppliers and access to trusted fabrication sources for advanced technology semiconductors has declined. This trend is alarming to those uneasy about maintaining U.S. national competitiveness, but is of acute concern to the defense and intelligence community. Access to a Trusted Foundry is imperative to ongoing and future DoD/NSA systems, and most centrally, Trusted Foundry assess is absolutely necessary to meet secure communication and cryptographic needs.

The Trusted Foundry Program is a combined DoD-NSA project to develop and manufacture Application Specific integrated Circuits (ASICs) for critical DoD systems in a secure industrial environment. The Trusted Foundry process assures ASIC integrity from development and design through final delivery from NSA designated ASIC production facilities. ASD (NII) designates critical DoD systems to participate in the Trusted Foundry program. Identified Program Offices coordinate with NSA Trusted Foundry Program Office to design and deliver ASICs meeting DoD system specifications. The ASICs are provided to DoD programs as Government Furnished Equipment (GFE).

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FY 2004 Accomplishments: N/A

FY 2005 Plans (\$30.000 million)

Provides custom integrated circuits for the U.S. Army, U.S. Navy, U.S. Air Force, and Defense Advanced Research Projects Agency (DARPA) to satisfy requirements under the Defense Trusted Integrated Circuit Strategy (DTICS). Mostly prototype developments for these activities will occur this year; however, some production is possible. Funding will also purchase dedicated secure communications equipment and facility modifications necessary to clear the IBM fabrication facility in Burlington, Vermont.

FY 2006 Plans (\$31.655 million)

Provides additional integrated circuits for the U.S. Army, U.S. Navy, U.S. Air Force, and DARPA to satisfy new and on-going programs. New product developments will occur, as well as production parts for some of the prototype developments sponsored the previous year(s). Funding will also purchase dedicated secure communications equipment and facility modifications necessary to clear the IBM fabrication facility in East Fishkill, New York. Maintenance support for the facility infrastructure equipment in Vermont and New York is also included.

FY 2007 Plans (\$41.860 million)

Provides additional integrated circuits for the U.S. Army, U.S. Navy, U.S. Air Force, and DARPA to satisfy new and on-going programs. Costs are projected to be higher due to increased number of parts estimated and cost increases necessary to procure advanced technology parts. New product developments will occur, as well as production parts for some of the prototype developments sponsored the previous year(s). Maintenance support for the facility infrastructure equipment in Vermont and New York is also included.

B. Program Change Summary: N/A

C. Other Program Funding Summary:

Replicate the funding shown above A. and label as NSA support to the Trusted Foundry Program.

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D. Acquisition Strategy:

NSA has negotiated a “take or pay” contract with IBM with 10 one year options going through FY 2013. IBM will provide custom integrated circuit parts in production and prototype quantities to meet DoD/NSA needs.

E. Performance Metrics:

All delivered parts will meet IBM standard commercial requirements. Any damaged or misprocessed parts will be replaced free of charge.

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Exhibit R-2, RDT&E Budget Item Justification							Date: February 2005		
Appropriation/Budget Activity RDT&E, Defense Wide/BA-5				R-1 Item Nomenclature Defense Acquisition Executive (DAE), PE 0605648D8Z					
Cost (\$ in Millions)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DAE		0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000
A. Mission Description and Budget Item Justification									
<p>BRIEF DESCRIPTION OF ELEMENT: The War On Terrorism challenges the Department of Defense (DoD) to devote resources not only to countering the asymmetric threats posed by adversaries but to also exploit the advantages of technology superiority in new, transformational ways. At the same time, it has become clear that a new balance must be struck between direct support for joint Combatant Commanders (CoComs) fighting on the front line of the War On Terrorism and longer term planned Service investment strategies. The Defense Acquisition Executive (DAE) Pilot program is designed to provide an avenue for joint and transformational capabilities from Advanced Concept Technology Demonstrations (ACTDs) and Joint Capability Technology Demonstrations (JCTDs) that may not be covered by Service programs to continue a logical progression of program phases and development in order to be suitable for full production and deployment to the warfighter.</p> <p>This pilot program will also demonstrate spiral acquisition concepts with a goal of getting priority joint and transformational capabilities deployed to the warfighter more quickly. Specifically, this PE will support selected joint capability technologies that are being integrated into programs that have passed Milestone B and are conducting engineering and manufacturing development to meet validated joint needs. The aim is to fully integrate these more mature capabilities into either an existing system or a new system being deployed. The result should be a successful Milestone C decision. With strong support from CoComs, ACTDs have enhanced joint capabilities providing an “on ramp” to conventional acquisition processes for joint needs in a system that emphasizes Service-sponsored core military capabilities. JCTDs will concentrate that effort with continued emphasis on transitioning demonstration-proven capabilities into Programs of Record (PoR) for sustainment of residuals and rapid acquisition and fielding of production models. The DAE Pilot Program, using ACTDs and JCTDs, will pioneer a transformational new model for Department of Defense acquisition by using funding in BA4, BA5 and Procurement to provide a path for those capabilities that are so transformational that they must be put on a “fast track” to acquisition. The DAE Pilot Program will be aligned with the Joint Capabilities Interoperability Development System (JCIDS) by addressing the needs of CoComs directly. The Defense Wide RDT&E funding for this program in BA3, BA4 and BA5 will be managed by the Deputy Under</p>									

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Secretary of Defense for Advanced Systems and Concepts (DUSD(AS&C) to support the spectrum of technology development through initial acquisition providing the Combatant Commanders, Services, Agencies, and operators with adequate time to address other issues of supportability, maintainability and training.

B. Program Change Summary

	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	0.000	0.000	0.000	0.000
Current FY 2006 President's Budget	0.000	0.000	1.000	1.000
Total Adjustments:	0.000	0.000	-1.000	-1.000
Congressional program reductions				
Congressional Rescissions				
Congressional Increases				
Reprogrammings				
SBIR/STTR Transfer				
ACTD Transfer (0603750D8Z)			-1.000	-1.000

C. Other Program Funding Summary: The new JCTD Program provides a “cradle to grave” path for transformational joint capabilities. The initial funding lines are outlined in the table below. Refer to the specific Budget Exhibit for more details on each funding line.

ACTD and JCTD Program Funding Summary	APPN	BA	PE	LINE #	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Concept Technology Development (ACTD)	RDT&E	3	0603750D8Z	44	212.570	212.915	163.649	163.744
Joint Capability Technology Demonstration (JCTD)	RDT&E	3	0603648D8Z	36	0	0	35.000	35.000
Joint Capability Technology Demonstration (JCTD)	RDT&E	4	0604648D8Z	83	0	0	3.000	3.000
Defense Acquisition Executive (JCTD Pilot Program)	RDT&E	5	0605648D8Z	99	0	0	1.000	1.000

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Procurement (JCTD Pilot), Major Equipment-OSD Def Wide	Proc	1	0902198D8Z		0	0	1.000	1.000
Total:							40.000	40.000

D. Acquisition Strategy: . Two programs are currently under review for including in this Budget Activity—these include the Urban Recon ACTD and the Joint Automated Deep Operations Coordination System (JDOCS). Urban Recon is under the Program Management of USSOCOM while JDOCS is under the purview of the Joint Precision Strike Demonstration (JPSPD) program office.

E. Performance Metrics:

- Capability gained from at least one JCTD/ACTD per year will transition to an acquisition program(s) of record, GSA Schedule, CoCom sustinment or, in the case of software-based products, operationally-sustained systems (such as the Global Command and Control System (GCCS)).
- JCTD/ACTD products selected will reach Milestone C within one year of Milestone B decision.

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Exhibit R-2a, RDT&E Project Justification						Date: February 2005		
Appropriation/Budget Activity RDT&E, Defense Wide/BA-5			R-1 Item Nomenclature Defense Acquisition Executive (DAE), PE 0605648D8Z					
Cost (\$ in Millions)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
DAE	0.000	0.000	1.000	1.000	1.000	1.000	1.000	1.000

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT:

The War On Terrorism challenges the Department of Defense (DoD) to devote resources not only to countering the asymmetric threats posed by adversaries but to also exploit the advantages of technology superiority in new, transformational ways. At the same time, it has become clear that a new balance must be struck between direct support for joint Combatant Commanders (CoComs) fighting on the front line of the War On Terrorism and longer term planned Service investment strategies. The Defense Acquisition Executive (DAE) Pilot program is designed to provide an avenue for joint and transformational capabilities from Advanced Concept Technology Demonstrations (ACTDs) and Joint Capability Technology Demonstrations (JCTDs) that are not covered by Service programs to continue a logical progression of program phases and development in order to be suitable for full production and deployment to the warfighter. This pilot program will also demonstrate spiral acquisition concepts with a goal of getting priority joint and transformational capabilities deployed to the warfighter more quickly. Specifically, this PE will support selected joint capability technologies that are being integrated into programs that have passed Milestone B and are conducting engineering and manufacturing development to meet validated joint needs. The aim is to fully integrate these more mature capabilities into either an existing system or a new system being deployed. The result should be a successful Milestone C decision.

DAE Selection Process:

The JCTD Program will use a deliberate process for selecting the transitioning ACTDs into this program element. Successful MUAs will be balanced against the top priorities of the CoComs, Defense Components, industry and coalition partners. The proposed transitioning JCTD candidates will be briefed to the JCS Functional Capability Boards to ensure mission needs remains intact.. The

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principal management tool for the transitioning JCTD will be the Transition Plan (TP), crafted during the initial JCTD program. Each approved JCTD will be described in these top-level documents which provide details of the demonstration/evaluation, the main objectives, approach, critical events, measures of success, transition options, participants, schedule, and funding. In order for the DAE Pilot Program to start in FY 2006, candidates for the first two years of the pilot will be selected from ACTDs already underway or recently completed. If warranted, the program office will proceed to Milestone B and Milestone C decisions.

B. PROGRAM ACCOMPLISHMENTS AND PLANS – FY 2004 THROUGH FY 2007:

FY 2004/2005 General Program Accomplishments

Not applicable.

FY 2006 and FY 2007 General Program Plans:

AS&C will initiate the JCTD Program and the DAE Pilot program in FY 2006 by assessing the top priority needs of the CoComs and then reviewing the list of ongoing and completed ACTDs. The DAE Pilot Program will begin by selecting capability(s) from the ACTD program that are mature enough to transition to a Program of Record close to a Milestone B decision. By conducting engineering and manufacturing development to meet validated joint needs, the aim is to fully integrate these more mature capabilities into either an existing system or a new system being deployed. The result should be a successful Milestone C decision.

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C. Other Program Funding Summary: The new JCTD Program provides a “cradle to grave” path for transformational joint capabilities. The initial funding lines are outlined in the table below. Refer to the specific Budget Exhibit for more details on each funding line.

ACTD and JCTD Program Funding Summary	APPN	BA	PE	LINE #	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Concept Technology Development (ACTD)	RDT&E	3	0603750D8Z	44	212.570	212.915	163.649	163.744
Joint Capability Technology Demonstration (JCTD)	RDT&E	3	0603648D8Z	36	0	0	35.000	35.000
Joint Capability Technology Demonstration (JCTD)	RDT&E	4	0604648D8Z	83	0	0	3.000	3.000
Defense Acquisition Executive (JCTD Pilot Program)	RDT&E	5	0605648D8Z	99	0	0	1.000	1.000
Procurement (JCTD Pilot), Major Equipment-OSD Def Wide	Proc	1	0902198D8Z		0	0	1.000	1.000
Total:							40.000	40.000

D. Acquisition Strategy: Two programs are currently under review for including in this Budget Activity—these include the Urban Recon ACTD and the Joint Automated Deep Operations Coordination System (JDOCS). Urban Recon is under the Program Management of USSOCOM while JDOCS is under the purview of the Joint Precision Strike Demonstration (JPSD) program office

E. Major Performers: The majority of funding from this Program Element will be forwarded directly to the Services/Defense Agencies which manage all contracting and support requirements.

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Exhibit R-2/R-2a, RDT&E Budget Item Justification								February 2005	
Appropriation/Budget Activity Engineering and Manufacturing Development RDT&E, DW, Budget Activity: 5					100 Item Nomenclature: Domain Management and Systems Integration - Core Business Mission Areas PE 0901200D8Z				
Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
Total PE Cost		0	7.298	11.802	12.386	13.158	13.191	13.568	13.459

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT

The Business Management Modernization Program (BMMP) Core Business Mission Areas were established as part of the program’s governance approach. The mission of the Core Business Mission Areas is to lead business process transformation through business process reengineering (BPR) and system integration. The results of the reengineering efforts will be documented in the Business Enterprise Architecture (BEA) and will serve as a framework to guide investments in business management operations and systems.

In accordance with the National Defense Authorization Act for FY 2005, the Secretary established the Defense Business Systems Management Committee (DBSMC), chaired by the Deputy Secretary of Defense with the Under Secretary of Defense (Acquisition, Technology, and Logistics) (USD (AT&L)) as the Vice Chair. The DBSMC will provide recommendations to the Secretary that will ensure the use of common decision criteria for DoD business system modernization to align business transformation to Warfighter capabilities and objectives. The Vice Chair will provide acquisition oversight of the Department’s business transformation efforts along with the four appointed Approval Authorities for defense business systems; USD (AT&L), USD (Personnel and Readiness), USD (Comptroller), and Assistant Secretary of Defense (Networks and Information Integration). The DBSMC is under charter as defined by Section 186 of USC Title 10. Convening in February, the DBSMC will comply with the March 15, 2005 reporting requirements mandated. Within that reporting, the DBSMC will identify that the Approval Authority Investment Review Boards (IRBs) have convened and that a threshold criteria for the review and certification of Defense Business Systems has been established. In setting up the IRBs, the DBSMC will conduct a formal review of the Defense Business Systems Modernization Program’s accomplishments to date; and review and ratify new program objectives, structure and baseline. The Program is on track to comply with all aspects of the law by September 30, 2005.

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Accomplishments/Planned Program:FY 2005:

1. The Financial Management Core Business Mission Area will begin Data modeling of the Department's program and budget formulation information. The results of the modeling will be documented in the BEA that will be used to define the requirements for a COTS system solution(s).
2. The Financial Management Core Business Mission Area will begin reengineering the cost accounting and Funds Distribution processes with a focus on data standardization. The results of the BPR will be documented in the Business Enterprise Architecture (BEA).
3. Installations and Environment Core Business Mission Area will conduct a Real Property Inventory (RPI) Analysis of Alternatives (AoA); a receipt and Acceptance BPR; establish the real property site unique identifier (RPUID) registry and develop and implement a Department-wide I&E transition plan; and conduct an "As-Is" IT systems technical health assessment.
4. The Installations and Environment Core Business Mission Area will conduct a hazardous materials management operations BPR; begin linking environment, safety and occupational requirements data with the RPI; and incorporate the results of the environmental liability reporting BPR into the BEA.
5. The Installations and Environment Core Business Mission Area will support Financial Management's financial backbone projects.

FY 2006:

1. The Financial Management Core Business Mission Area will continue modeling the Department's program and budget formulation process. The results of the BPR will be documented in the BEA that will be used to define the requirements for a COTS system solution(s).
2. The Financial Management Core Business Mission Area will begin reengineering the cost accounting and Funds Distribution processes with a focus on data standardization. The results of the BPR will be documented in the Business Enterprise Architecture (BEA).
3. The Installations and Environment Core Business Mission Area will continue business process reengineering, IT systems portfolio management; and real property unique identifier registry implementation; develop a detailed real property inventory transition plan and begin implementation; conduct AoAs for Receipt and Acceptance and hazardous materials management; and continue linking environment safety and occupational health requirements data with the RPI, BPR results will be documented in the Business Enterprise Architecture (BEA).
4. The Installations and Environment Core Business Mission Area will support Financial Management's financial backbone projects.

FY 2007:

1. The Financial Management Core Business Mission Area will model the entire Planning, Programming, Budgeting and Execution (PPBE) processes information structure to ensure integration across the PPBE. All efforts will be fully integrated within previously developed standard data structure and documented in the BEA. In addition models will be developed to ensure deployment can be accomplished given current and future systems and processes.
2. The Financial Management Core Business Mission Area will continue reengineering the cost accounting process with a focus on data standardization. The BPR will result in standard business processes that incorporate leading practices from both government and industry. The results of the BPR will be documented in the Business Enterprise Architecture (BEA).
3. The Financial Management Core Business Mission Area will continue with a functional support office at the Core Business Mission Area to facilitate the development of a common Defense Agency accounting system solution
4. The Installations and Environment Core Business Mission Area will business process reengineering, IT systems portfolio management; and develop detailed transition plans for completed BPRs.

The Installations and Environment Core Business Mission Area will support Financial Management's financial backbone projects.

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B. Program Change Summary	<u>FY 2004</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>
Previous President's Budget	0	7.472	7.394	7.681
FY 2006/FY 2007 President's Budget	0	7.298	11.802	12.386
Total Adjustments	0	-0.174	4.408	4.705
Program Adjustment			4.200	4.300
Congressional adjustments(undistributed)			0.208	0.405

Current Budget Submit/Budget Estimate

Program Change Summary Explanation: The change from FY 2005 to FY 2006 is due to JFMIP compliant Defense Enterprise Accounting and Management System (DEAMS) initiative planned to support accounting for working capital funds at the USTRANSCOM and Air Force. Accelerating movement to JFMIP – compliant programs is central to Core Business Mission Area efforts to modernize information technology capabilities in support of the BMMP Increment 1 goal of achieving clean financial audits. General adjustments and revised economic factors account for the remaining changes from FY 2006 to FY 2007.

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: The strategy will be to competitively contract with the private sector for required effort. Additional details about the Acquisition Strategy are listed in the Exhibit 300/Modified 300.

E. Performance Metrics: The performance metrics for these resources are separately addressed in the Exhibit 300/Modified 300. A separate exhibit is also included in the FY 2006 President's Budget in support of the Program Assessment Rating Tool. Additional performance metrics, other than those reported, are currently under development.

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Exhibit R-3, RDT & E, DW Project Cost Analysis										Date: February 2005		
Appropriation: RDT&E, DW, Budget Activity: 5					Program Element: 0901200D8Z					Domain Management and Systems Integration		
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Financial Management Core Business Mission Area	Interagency Agreement	OSD	0	3.489	Feb 2005	3.551	Feb 2006	3.926	Feb 2007	16.334	27.300	27.300
Installations and Environment Core Business Mission Area Technical and Administrative Services	GSA MOBIS Schedule Time and Material	OSD	0	0.809	April 2005	4.051	Dec 2005	4.160	Dec 2006	17.742	26.762	26.762
JFMIP compliant DEAMS initiative support	Interagency Agreement	OSD	0	0		4.200	Jan 2006	4.300	Jan 2007	19.300	27.800	27.800
Installations and Environment Core Business Mission Area AoA	TBD	OSD	0	3.000	April 2005	0		0		0	3.000	3.000

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Exhibit R-4, Schedule Profile																							Date: February 2005													
Appropriation/Budget Activity RDT&E, DW, Budget Activity: 5												Program Element Number and Name 0901200D8Z Business System Transformation										Project Number and Name 210 Domain Management and Systems Integration														
Fiscal Year	2001				2002				2003				2004				2005				2006				2007				2008				2009			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Increment 1 BPR																																				
Increment 2 BPR																																				
Increment 3 BPR																																				
Increment 4 BPR																																				

R-4 Schedule Profile - Item No. 20-3 of 20-4

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Exhibit R-4a, Schedule Detail					Date: February 2005				
Appropriation/Budget Activity RDT&E, DW, Budget Activity: 5		Program Element Number and Name 0901200D8Z Business System Transformation			Project Number and Name 210 Domain Management and Systems Integration				
Schedule Profile	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	FY2008	FY2009	
Increment 1 BPR				1Q					
Increment 2 BPR				1Q	1Q				
Increment 3 BPR					1Q	1Q			
Increment 4 BPR						1Q	1Q		

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