OSD RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE
RDTE, Defense Wide BA 03	**0603648D8Z - Joint Capability Technology Demonstration (JCTD)**

	COST ($ in Millions)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
P648	Joint Capability Technology Demonstration (JCTD)	35.594	202.484	206.337	201.975	195.537	198.276	201.211

A. Mission Description and Budget Item Justification: In FY 2006, the Deputy Undersecretary of Defense for Advanced Systems and Concepts (DUSD(AS&C)) initiated a new business process, building on the successful ACTD program, to support the Department's transformational reform of addressing future threats from a capabilities focus versus the classical threat based viewpoint. The revised ACTD approach is called the Joint Capability Technology Demonstration (JCTD) program, and is based on proven, positive aspects of the ACTD program with new modifications. The JCTD model specifically addresses congressional concerns and recommendations made by the General Accountability Office (GAO) regarding rapid development and transitioning of Combatant Commander (CoCom) relevant capabilities to the joint warfighter in a more cost effective, timely and efficient model. Aligning closely with the thrust of with the Joint Staff's Joint Integration and Development System (JCIDS), JCTDs take a more balanced project candidate identification approach, shifting the overall program's focus to identifying specific warfighter capabilities needs up front (requirements pull), and then finding technology or concepts to address these needs, while maintaining the historical ACTD approach, where new technology is introduced to the warfighter to solve existing operational shortfalls (technology push). FY 2006 was the first year of a three to five year transition period from the current ACTD to the improved JCTD program. However, in FY08 all ACTD funding is being transferred to the JCTD program to complete this transition more quickly than originally anticipated. Beginning in FY07 all new starts will be JCTDs. This will implement a process that will more rapidly provide demonstrated solutions to joint warfighter needs, and unique transformational capabilities through the application of new operational concepts or technology from the Science and Technology (S&T) domain. The resources are aimed at carrying successful projects through the difficult transition stage ("S&T valley of death"). The remaining ongoing ACTDs that were started in previous years but not yet complete will be funded to completion in the JCTD program element and will complete in two to three years. It is anticipated that all ongoing ACTDs will be complete by FY09. In FY 2007, 10 JCTD new start projects were initiated and 20 projects were completed. To better support the rapid transition of joint, CoCom/coalition operational capabilities, the JCTD business model includes a JCTD Transition program element. While not all ACTDs and JCTDs require transition funding, these resources provide a "transition bridge" to enable sustainment for innovative, "joint-peculiar" and CoCom/coalition capabilities until traditional programming and budgeting can provide a permanent solution.

The appropriation, Program Element (PE) and Budget Activity (BA) structure for the new JCTD process includes the following:

- JCTD PE 0603648D8Z (RDT&E/DW BA-3)
- JCTD Transition Funding PE 0604648D8Z (RDT&E/DW BA-4)

In FY 2006, DUSD(AS&C) shifted an initial allocation of resources ($40 million) from the ACTD PE 0603750D8Z to populate three JCTD program element (PE)s. In FY08 all remaining ACTD resources will shift into the JCTD BA 3 PE 0603648D8Z. This will initially establish a funding stream to support approximately five to ten new JCTDs each year. The BA-3 JCTD PE will replace the current ACTD BA-3 PE in FY08; The JCTD and remaining ACTD projects used the combined resources of both the JCTD and ACTD PEs in FY07. In FY08 and out any remaining ACTDs will be supported with funding from the JCTD PE until completion in the next two or three years. JCTDs are initiated in Budget Activity three (BA-3) and are pre-acquisition demonstrations, characterized by Technology Readiness Levels 4, 5 or 6. Although not fully developed for production, the new JCTD model can provide a path for transition of Science and Technology to acquisition and are low-to-moderate risk vehicles for pursuing those objectives. The Defense Wide RDT&E funding managed by DUSD(AS&C) will support demonstration of military utility and deployment of interim capability including a transition period to a program of record, providing the Combatant Commanders, Services, Agencies, and operators with adequate time to address the transition issues of supportability, maintainability and training identified by the JCTD/ACTD. As described, the JCTD Program has established a new model that enhances successful demonstrations with the addition of a transition

arm through funding in the JCTD Transition BA4 program element (PE). The JCTD transition PE provides a path for rapid fielding of successful, transformational capabilities that may require additional transition resources to "bridge" to a program of record. To ensure successful capabilities transition to the CoCom this budget requests a shift of $10 million in FY09 from the JCTD BA3 PE into the JCTD Transition BA4 PE. This shift will better balance the JCTD model and enhance the ability to fully transition the most compelling capabilities to the CoComs.

FY 2008/2009 General Program Plan: DUSD (AS&C) will maintain oversight of the JCTD program. The FY 2008 candidate review and validation process began in March 2007, with JROC validation in June of 2007. Congressional notification of the FY 2008 new start selections occurred on November 28, 2007. There are eight "new start" JCTDs and five "rolling starts" proposed. Rolling start projects represent important warfighter concerns and potential capabilities that are not fully developed for initiation. However, to remain agile, because of the compelling capability a plan to start is derived if the development for starting is completed. Four of the five rolling starts were initiated in FY 2007. These projects address issues with emerging technologies that could be significant "game changers". While these projects have been successfully vetted through the JCTD selection process, some additional proposal development must be addressed with the stakeholders (i.e., Services, Agencies, Coalition and Inter-agency partners), prior to project initiation. This year, five candidates emerged that were particularly compelling; however, due to technology or resource related issues, they are still in a developmental stage. For FY 2009, the new start selection process will be repeated beginning in March 2008. Funding available for initiating new FY 2008 JCTDs is approximately $50 million. In FY09 all JCTD funding is anticipated to be approximately $50 million will be available for JCTD new start/rolling start initiatives. Due to the accelerated pace of JCTD development over ACTDs (JCTDs demonstrate in 2 to 3 years), the turnover rate is faster, thus funding for new starts each year has increased to approximately $50 million per year. However, because of the larger per project investment and faster completion it is estimated that the number of "ongoing" projects at any time will average between 40 and 50 projects, vice 60 in the ACTD program.

B. Program Change Summary	FY 2007	FY 2008	FY 2009
Previous President's Budget (FY 2008)	36.468	194.352	207.740
Current BES/President's Budget (FY 2009)	35.594	202.484	206.337
Total Adjustments	-0.874	8.132	-1.403
Congressional Program Reductions			
Congressional Rescissions	-0.108	-1.768	
Congressional Increases		9.900	
Reprogrammings			-10.000
SBIR/STTR Transfer	-0.766		
Other			8.597

In FY07 congressional increases of $1.125 million for Computer Assisted Threat Exploitation Program (CATE) enabling technology. Congressional rescissions and other taxes such as Section 8023 for FFRDC and SBIR/STTR.

FY08 congressional increases of $9.9 million include the following enabling technologies: Distributed Network Switching Joint Capability Demonstration, Hardware Encryption

Tech Program, Louisiana Command and Control Interoperational Communications and Information, Simultaneous Field Radiation Technology (SFRT), and Spartan Advanced Composite Technology. In addition there were congressional recessions for Sections 8025 (FFRDC), 8097 and 8104 totaling $1.768 million.
In FY08 and FY09 all ACTD BA3 funding (Program Element (PE) 0603750D8Z) transfers into the JCTD BA3 PE 0603648D8Z.

In FY09 $10 million of JCTD BA3 funding (PE 0603648D8Z) transfers to the JCTD Transition BA4 PE (0604648D8Z) to support project transition. Additionally PDM II added $9 million in FY09 for the Large Data JCTD and $403K was shifted within DoD to cover certain economic assumptions with inflation and fuel.

C. Other Program Funding Summary Not applicable for this item.

D. Acquisition Strategy Not applicable for this item.

E. Performance Metrics:

FY	Strategic Goals Supported	Existing Baseline	Planned Performance Improvement / Requirement Goal	Actual Performance Improvement	Planned Performance Metric / Methods of Measurement	Actual Performance Metric / Methods of Measurement
08	Project Selection Focus					
	Spiral Technologies					
	Time to Final Demonstration					
	Adequately Shared Funding and Visibility					
	Independent Assessment Capability					
	Successful Military Utility Assessment (MUA)					

Comment: The majority of funding from this Program Element is forwarded to the Services/Defense Agencies that execute the individual JCTD projects. DUSD(AS&C) maintains and provides overall programmatic oversight for the JCTD program, to include the individual JCTD projects. The JCTD performance metrics center on how fast relevant joint and/or transformational technologies can be demonstrated and provided to the joint warfighter. These metrics are driven by the overall business process which includes six parts: (1) selection focus; (2) ability to spin-off spiral technologies; (3) time necessary to complete a final demonstration; (4) adequately resourced projects with appropriate oversight; (5) capability to complete an independent assessment of the technology; and (6) the number of successful capabilities that are actually transitioned to the

warfighter. The table below defines the metrics of the new JCTD business process model.

1) Project Selection Focus: Capability Based: Greater CoCom influence looking at nearer term joint/coalition needs.

2) Spiral Technologies: 25% of JCTDs will provide an operationally relevant product demonstration within 24 months of Implementation Directive (ID) signature.

3) Final Demonstration Completed: 75% of JCTD projects complete final demonstration within three years of ID signature.

4) Shared Funding and Viability of resources: OSD provides significantly more funding than the former ACTD program, greater than 30% in some cases a majority of projected funding, especially in the first two years.

5) Complete independent assessment.

6) Number of capabilities transitioned to the warfighter.

OSD RDT&E BUDGET ITEM JUSTIFICATION (R2a Exhibit)

February 2008

APPROPRIATION/ BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
RDTE, Defense Wide BA 03	**0603648D8Z - Joint Capability Technology Demonstration (JCTD)**	**P648**

	COST ($ in Millions)	FY 2007 Estimate	FY 2008 Estimate	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate
P648	Joint Capability Technology Demonstration (JCTD)	35.594	202.484	206.337	201.975	195.537	198.276	201.211

A. Mission Description and Budget Item Justification: In FY 2006, the Deputy Undersecretary of Defense for Advanced Systems and Concepts (DUSD(AS&C)) initiated a new business process, building on the successful ACTD program, to support the Department's transformational reform of addressing future threats from a capabilities focus versus the classical threat based viewpoint. The revised ACTD approach is called the Joint Capability Technology Demonstration (JCTD) program, and is based on proven, positive aspects of the ACTD program with new modifications. The JCTD model specifically addresses congressional concerns and recommendations made by the General Accountability Office (GAO) regarding rapid development and transitioning of Combatant Commander (CoCom) relevant capabilities to the joint warfighter in a more cost effective, timely and efficient model. Aligning closely with the thrust of with the Joint Staff's Joint Integration and Development System (JCIDS), JCTDs take a more balanced project candidate identification approach, shifting the overall program's focus to identifying specific warfighter capabilities needs up front (requirements pull), and then finding technology or concepts to address these needs, while maintaining the historical ACTD approach, where new technology is introduced to the warfighter to solve existing operational shortfalls (technology push). FY 2006 was the first year of a three to five year transition period from the current ACTD to the improved JCTD program. However, in FY08 all ACTD funding is being transferred to the JCTD program to complete this transition more quickly than originally anticipated. Beginning in FY07 all new starts will be JCTDs. This will implement a process that will more rapidly provide demonstrated solutions to joint warfighter needs, and unique transformational capabilities through the application of new operational concepts or technology from the Science and Technology (S&T) domain. The resources are aimed at carrying successful projects through the difficult transition stage ("S&T valley of death"). The remaining ongoing ACTDs that were started in previous years but not yet complete will be funded to completion in the JCTD program element and will complete in two to three years. It is anticipated that all ongoing ACTDs will be complete by FY09. In FY 2007, 10 JCTD new start projects were initiated and 20 projects were completed. To better support the rapid transition of joint, CoCom/coalition operational capabilities, the JCTD business model includes a JCTD Transition program element. While not all JCTDs require transition funding, these resources provide a "transition bridge" to enable sustainment for innovative, "joint-unique" and CoCom/coalition capabilities until traditional programming and budgeting can provide a permanent solution.

The appropriation, Program Element (PE) and Budget Activity (BA) structure for the new JCTD process includes the following:

- JCTD PE 0603648D8Z (RDT&E/DW BA-3)
- JCTD Transition Funding PE 0604648D8Z (RDT&E/DW BA-4)

In FY 2006, DUSD(AS&C) shifted an initial allocation of resources ($40 million) from the ACTD PE 0603750D8Z to populate three JCTD program element (PE)s. In FY08 all remaining ACTD resources will shift into the JCTD BA 3 PE 0603648D8Z. This established a funding stream to support approximately five to ten new JCTDs each year. The BA-3 JCTD PE will replace the current ACTD BA-3 PE in FY08; The JCTD and remaining ACTD projects used the combined resources of both the JCTD and ACTD PEs in FY07. In FY08 and out any remaining ACTDs will be supported with funding from the JCTD PE until completion in the next two or three years. JCTDs are initiated in Budget Activity three (BA-3) and are pre-acquisition demonstrations, characterized by Technology Readiness Levels 4, 5 or 6. Although not fully developed for production, the new JCTD model can provide a path for transition of Science and Technology to acquisition and are low-to-moderate risk vehicles for pursuing those objectives. The Defense Wide RDT&E funding managed by DUSD(AS&C) will support demonstration of military utility and deployment of interim capability including a transition period to a program of record, providing the Combatant Commanders, Services, Agencies, and operators with adequate time to address the transition issues of supportability, maintainability and training

identified by the JCTD/ACTD. As described, the JCTD Program has established a new model that enhances successful demonstrations with the addition of a transition arm through funding in the JCTD Transition BA4 program element (PE). The JCTD transition PE provides a path for rapid fielding of successful, transformational capabilities that may require additional transition resources to "bridge" to a program of record. To ensure successful capabilities transition to the CoCom this budget requests a shift of $10 million in FY09 from the JCTD BA3 PE into the JCTD Transition BA4 PE. This shift will better balance the JCTD model and enhance the ability to fully transition the most compelling capabilities to the CoComs.

FY 2008/2009 General Program Plan: DUSD (AS&C) will maintain oversight of the JCTD program. The FY 2008 candidate review and validation process began in March 2007, with JROC validation in June of 2007. Congressional notification of the FY 2008 new start selections occurred on November 28, 2007. There are eight "new start" JCTDs and five potential "rolling starts" proposed. The FY08 new start projects will commence at the end of December 2008. Rolling start projects represent important warfighter concerns and potential capabilities that are not fully developed for initiation. However, to remain agile and the potential of the compelling capability, a plan to start is derived if the development for starting the project is completed. Four of the five rolling starts were initiated in FY 2007. These projects address issues with emerging technologies that could be significant "game changers". While these projects have been successfully vetted through the JCTD selection process, some additional proposal development must be addressed with the stakeholders (i.e., Services, Agencies, Coalition and Inter-agency partners), prior to project initiation. This year, five rolling start candidates emerged that were particularly compelling; however, due to technology or resource related issues, they are still in a developmental stage. For FY 2009, the new start selection process will be repeated beginning in March 2008. It is anticipated that new start initiatives will range from 5 to 7 JCTDs. Funding available for initiating new FY 2008 JCTDs is approximately $50 million. In FY09 all JCTD funding is anticipated to be approximately $50 million will be available for JCTD new start/rolling start initiatives. Due to the accelerated pace of JCTD development over ACTDs (JCTDs demonstrate in 2 to 3 years), the turnover rate is faster, thus funding for new starts each year has increased to approximately $50 million per year.

B. Accomplishments/Planned Program:

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Counter Intelligence - Human Intelligence Architecture Modernization Program, Intelligence Operations Now (CHAMPION)	1.200	1.200	

The Joint Requirements Oversight Council (JROC) validated the capability need for CHAMPION as a FY06 new start Joint Capability Technology Demonstration. The outcome will provide improved capabilities for the counter-intelligence, human-intelligence and special forces communities of interest. These improvements will provide an accessible and actionable information system for management of the CI/HUMINT/SOF collection, mission planning and asset management information. The capabilities include technologies for integration of biometrics and geospatial information. The primary outputs to be demonstrated to the users and evaluated in the Military Utility Assessment are: 1) joint data standard for human domain; 2) CHAMPION information collection tool and associated concept of operations (CONOPS), tactics, techniques and procedures (TTPs); 3) CI-HUMINT/SOF source management tools with federated search capability and data replication/access across multiple networks; and 4) integrated language translation collection, CIHUMINT source vetting tool and data access tools for multi-intelligence discipline fusion. The efficiencies to be gained are; 1) improved effectiveness of HUMINT operations; 2) elimination of Human domain data stovepipes; 3) joint human domain data standard; 4) improved web enabled data access across multiple networks and security levels; 5) Joint CONOPs/ TTPs; 6) Biometric and geo-spatially enabled mission and asst management tools. The transition strategy is to incorporate CHAMPION capabilities into the Distributed Common Ground Station program of record (POR). The sponsoring Combatant Command (CoCom) is the U. S. Central Command (CENTCOM). Other organizations involved as participants, users of capabilities, and/or observers include USSOCOM, USJFCOM, Counter-Intelligence Field Activity, Defense Intelligence Agency, National Geospatial Agency, and the National Security Agency. The lead service is the Army.
- FY 2007 Output - Complete Spiral 1 limited assessment report and Spiral 2 assessment plan. Execute the Spiral 2 demonstration and assessment of Spiral 2 deliverables. Prepare final assessment plan. Complete approval of transition plan. Secure funding for fielding of spiral deliverables and interim capabilities found to have military utility by operational sponsor.

- FY 2008 Planned Output - Execute final military utility assessment and finalize CONOPs and TTPs. Continue efforts to field spiral deliverables and interim capabilities found to have military utility by operational sponsor. The project will complete in FY2008. In FY2009 the project will transition to Program of Record.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Comprehensive Maritime Awareness (CMA)	1.100	5.600	

The Joint Requirements Oversight Council validated the capability need for CMA as an FY06 new start. The outcome of CMA is demonstration and transition of technologies and operations concepts showing the value of information sharing and effective information management for improving global Maritime Domain Awareness. CMA will demonstrate the value of both interagency and international (Republic of Singapore) information sharing. CMA will demonstrate data management techniques such as automated anomaly detection and threat evaluation, and application of the Department of Defense Net-Centric Data Strategy. CMA is a 4-year project sponsored by U.S. Pacific Command, U.S. Northern Command, and U.S. European Command. Initial capabilities will be demonstrated and operated in CY-06, with advanced capability spirals in FY07 and FY08, and transition support in FY09. The lead Service is U.S. Navy. The primary outputs and efficiencies to be demonstrated in CMA Military Utility Assessments are (1) percent increase in the number of maritime tracks and identified tracks in U.S. military, interagency, and coalition maritime operational pictures; (2) percent increase in numbers of maritime contacts with amplifying information (such as crew list, cargo manifest, port-of-call history, etc.); (3) percent increase in numbers of vessels of interest monitored by maritime intelligence analysts; (4) number of automated anomaly detections and threat alerts provided to maritime intelligence analysts; (5) increase in number of agencies (U.S. and international) engaged in information sharing across a common service oriented architecture.

- FY 2007 Output - Operated FY 2006 spiral capability. Integrated capabilities of the U.S. Coast Guard Vessel Tracking program, and automated anomaly and threat assessment, and regional maritime analysis nodes. Planned for initial military utility assessment.
- FY 2008 Planned Output - Integrate additional interagency data sources, and automated anomaly detection and threat assessment capabilities. Demonstrate net-centric services in accordance with DoD Net-Centric Data Strategy. Complete initial military utility assessment, plan final assessment. Project completion in FY2008.
- FY 2009 Planned Transition Output - Document final military utility assessment; complete transition documentation for U.S. Navy program of record; complete accreditation of software required for transition.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Modular Intermodal Distribution System (JMIDS)	2.930		

The Joint Requirements Oversight Council (JROC) validated the capability need for JMIDS as an FY06 new start. The outcome of JMIDS is to demonstrate, analyze and transition joint service, all-mode containers and platforms that are equipped with Automatic Identification Technology (AIT). JMIDS will permit efficient, seamless, and visible movement of supplies through the distribution system from CONUS-based depots and vendor locations to tactical end users. This includes movement through the Seabase to support forward operating expeditionary and task force units. JMIDS technologies will enhance the ability to source load supplies that can move from origin to destination without the current intensive and inefficient handling and re-packing caused by: 1) incompatible air and ground cargo systems; and, 2) sorting, storing, and/or reconfiguring cargo. The goal of this JCTD is to improve the agility, flexibility, efficiency, effectiveness, responsiveness, and interoperability of the Joint Distribution System.

JMIDS is a three-year project under sponsorship of US Transportation Command, with JCTD completion by the end of FY 2008, and transition to selected Program Manager(s) / Program of Record(s) [Joint Modular Intermodal Platform (JMIP) and Joint Modular Intermodal Container (JMIC)] by FY 2009. The lead service is Army. The primary outputs and efficiencies to be demonstrated in the JCTD Limited and Capstone Military Utility Assessments are: (1) Timeliness of JMIDS technologies to deliver supplies to operating forces as compared to present distribution system; (2) Capability to support transportability across different modes by reducing re-handling/ packing time; (3) Improved supply flow through the available technologies- Tonnage processed per hour, Time per load-out of platform Wait times per load-out; and, (4) Capability to support Command Level Situational Awareness-Accuracy of AIT tracking technology (contents, position), percent of JMICs tracked correctly, overall improvement of situational awareness upon use of AIT.

- FY 2007 Accomplishments - Completed acquisition of JMIC, JMIP and AIT demonstration hardware. Conducted three MUAs. Completed multiple Capability Development Documents (CDD) spirals and Integrated Logistics Support planning drafts. Commenced CDD staffing through the Services. Delivered hardware and conducted engineering tests for a Coalition Warfare Demonstration of the JMIDS hardware with the United Kingdom. JCTD completion in FY2008.

- FY 2008 Refer to JCTD BA4 R-2a

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Epidemic Outbreak Surveillance (EOS)		2.500	2.500

The Joint Requirements Oversight Council (JROC) validated the capability need for EOS as an FY05 start. The outcome of EOS is to demonstrate and transition solutions that are transformational dual use for operational and clinical medicine as well as bio-defense. EOS will incorporate as series of technologies to rapidly detect and identify a wide range of respiratory pathogens that are frequently and easily confuse in clinical encounters. It is intended to overcome two diagnostic challenges: 1) discrimination between diverse pathogens that present similar (i.e. fever & flu-like) symptoms; and 2) screening rapidly, accurately and simultaneously across multiple (20 - 30+) candidate pathogens. Clinically, a practitioner, if faced with 100 cases of flu will assume you also have the flu if you exhibit the same symptoms. EOS will ensure a correct diagnosis more quickly while running a series of pathogen tests in the background to look for biological attack. The overall goal is to develop a business case that makes the technology affordable for and integrated into the command structure for both routine and wartime scenarios. EOS will leverage sophisticated, advanced molecular biology procedures, bio-informatics, micro array and/or RT-PCR - based technologies integrating into medical command channels to provide all leadership levels key information needed to make time-critical decisions. Ultimately this situational awareness provides a high likelihood that correct diagnostic decisions will be made, potentially even prior to the onset of symptoms in some scenarios. In detect-to-warn and detect-to-treat applications, the EOS diagnostic supports sustainment of warfighter capabilities in biologically active domains by promoting earlier and targeted diagnosis, intervention, minimizing casualty losses, and reducing mission degradation. The first spiral of EOS has begun with the initiation of an avian flu (H5N1) warning network to established at 22 USAF sites worldwide. This system should be operational by the Fall, CY-2006, in time for the next flu season. DUSD/AS&C, USJFCOM (warfighter), AF/SG (technical manager), and JPEO/CBD (transition manager) are the principals for this ACTD. The ACTD will end in FY2008. Outputs and Efficiencies: Viral/Bacterial Agents per Chip Assay - 100 vice 20; Total Cycle Time per Individual Assay - 2 hours vice 8; Approximate Cost per Assay - $40 vice $500; Portability of Fully Capable System - 40 pounds vice 500; Rapid ID of Bio Agents vs. Backgrounds - 2 hours vice 1 day; Forensic Attribution of Agent Strains - days vice months; contain Outbreak and Reconstitute Forces - 2 days vice weeks.

- FY 2007 Output - Refer to the ACTD R2a.

- FY 2008 Planned Output- Transition surveillance solutions found to have utility during the final military utility assessment. Complete CONOP'S and TTP's. Conduct operational exercises with US Navy. Continue to monitor for avian flu outbreaks and institute warning as necessary. Transition residual products to active duty locations for use. Begin spiral two assessment of follow-on technologies in FY 2008 and 2009. The ACTD completes in FY 2008.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Coordinated Real-time Engagement (JCRE)		1.200	1.000

The Joint Requirements Oversight Council (JROC) validated the capability need for JCRE as an FY05 start. The outcome of JCRE will be to develop the CONOPS and the GIG-enabled software that enables Joint Real-Time Operations and Engagement across multi-Combatant Command (COCOM) Theaters and Echelons. JCRE will support Joint Operations by providing Net-Centric Command and Control Tools that greatly enhance Planning and Execution across multiple COCOMS. These tools will be provided as web services, so they can easily be extended to support Combined Operations as directed by the Operational Sponsor. The JCRE capability will be achieved by extending and integrating the following technologies: Joint Force Global Situational Awareness (SA) Tools; Joint Force Engagement Packages; and Joint Force Synchronization Tools. These JCRE technology components will be implemented using a Service Oriented Architecture (SOA) with distributed service orchestration. These JCRE technologies, tested on the Global Information Grid (GIG), will help validate whether the evolving GIG IP architecture and enterprise services can support the time sensitive performance requirements for global operations. Output and Efficiencies: % of relevant data that is properly synchronized; % of global operation centers that

have Synchronization awareness; % of synchronization problems that go undetected for > 10 minutes; Average time to detect a synchronization problem; Average time to determine impact of synchronization problems on effects; time to assemble and organize global effects; workload to assemble and organize global effects; time to synchronize global actions, capabilities, and resources; workload to synchronize global actions, capabilities, and resources; number of resynchronizations / number of original synchronizations (synchronization robustness); time to create a globally synchronized operational plan. The lead service is the Navy and the lead CoComs are U.S. Strategic Command and U.S. Special Operations Commands.

- FY 2007 Output - Refer to the ACTD R2a.

- FY 2008 Planned Output - Demonstration #3 (Fall 2007). Demonstration of Joint Force Global Situational Awareness Tools, Joint Force Engagement Packages, and Joint Force Synchronization Tools in a battle staff exercise. A Joint MUA will be performed in conjunction with the final demonstration. Demonstration goals may be changed based on Operational Manager's direction.

- FY 2009 Output: Prepare JCRE capability for primary transition to Net Enabled Command Capability (NECC). The EUE Package will consist of the JCRE System Prototype (all hardware and software required to host JCRE capabilities, in full or presentation server configuration), to be installed at USSTRATCOM, USSOCOM and DISA as necessary, and finalized CONOPS and TTP documents and training packages, to be delivered to US Joint Forces Command (USJFCOM). Secondary transition targets include USSTRATCOM and USSOCOM programs of record-Integrated Strategic Planning & Analysis Network (ISPAN) and Special Operations Mission Planning Environment (SOMPE), respectively. Navy PEO C4I and Space will transition relevant capabilities as web services into GCCS-M/NECC. The ACTD completes in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Sea Eagle		0.800	

The Joint Requirements Oversight Council (JROC) validated the capability need for Sea Eagle as an FY 2005 start. The outcome of Sea Eagle will be to demonstrate and transition technologies to provide persistent, clandestine, and unattended monitoring of maritime areas in a Special Operations Forces (SOF) deliverable "system of systems". These sensors and systems will be deliverable by SOF and networked in a multi-media (sea, air, land) system-of-systems approach. Sea Eagle will greatly increase SOF's ability to clandestinely conduct persistent, intrusive Intelligence, Surveillance, and Reconnaissance (ISR) in maritime areas. The war fighter will tactically emplace Sea Eagle systems to provide targeted, tactical information that complements national and theater intelligence assets to enable a layered intelligence collection strategy. These funds will be used to support technical down-select, systems integration, and demonstrations of sensors and communication technologies. The funds will support: 1. Johns Hopkins University Applied Physics Lab (JHU APL) and Naval Surface Warfare Center Panama City (NSWC PC) as the technical integrators for Sea Eagle; 2. Operational Manager support and demonstration costs; and 3, Procurement and integration of components for the demonstrations. Outputs and Efficiencies: The overarching output for Sea Eagle is persistence. This output incorporates a variety of initiatives such as power management, intelligent triggering, and signal discrimination to optimize system performance and persistence. Measures of persistence will be relevant for individual component, subsystem, and overall system performance. Quantitative metrics are classified. USSOCOM is the COCOM/User Sponsor; Navy is the Lead Service.

FY 2007 Accomplishments: Sea Eagle Management Plan signed and Security Classification Guide approved. Incorporated underwater communications and sensors into a clandestine, close access, mesh network. Cross environment connectivity between Land and Maritime system components was demonstrated in June 2007 proving the "concept" of the ACTD.

FY 2008 Planned Output: Sea Eagle Transition Plan signed. Draft CDD finalized and Technology Transition Agreement socialized. Incorporate underwater communications and sensors into a clandestine, close access, ad-hoc, self-healing mesh network. Demonstrate the undersea network and sensors in Q2 FY08. Conduct final Military Utility Assessment of the entire Sea Eagle network Q3 FY08. Upgrade land network protocol and integrated additional land sensors. Transition capabilities with immediate military utility. Refine CONOPS and TTPs. The ACTD will complete in FY2008.
FY 2009 Planned Transition Output: The Transition/Residual Period will be conducted and the ACTD will complete with transition to the SOCOM Global Sensor Network (GSN) POR by the end of the FY.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Agile Rapid Global Combat Support (ARGCS)		0.900	

The Joint Requirements Oversight Council (JROC) validated the capability need for ARGCS as an FY-04 start which is using advanced technologies to demonstrate a family of testers for electronic components and provide unprecedented interoperability between weapon systems, Services, and levels of maintenance. This will reduce costs and the proliferation of testers while improving the availability and performance of weapon systems. In addition, ARGCS will demonstrate technologies to facilitate net-centric diagnostics by capturing historical logistics data and developing an expert support system that will further reduce repair times and costs, as well as future sparing requirements. Outputs and efficiencies will include increases in performance, test accuracy, interoperability, reduced logistics and weapon system support costs, and reduced proliferation of automatic test systems in the future. Technologies demonstrated will reduce the time to field new tester, a reduction in the time to diagnose and repair, a reduction in proliferation of test systems, and a reduction in the logistics footprint. The ARGCS technology will be transitioned to the Services through existing automated test programs of record. The user sponsor is U.S. Pacific Command and the lead service is the Navy.

- FY 2007 Output - Refer to the ACTD R2a. The ACTD will complete MUA in FY2007.

- FY 2008 Planned Transition Output: Complete project documentation and final report. Continue to evaluate ARGCS military utility through the EUE. Support transition of ARGCS technologies to include the development and approval of a Joint Capabilities Document (JCD) that will guide the future direction of automatic test systems. JCD will focus on net-centric diagnostics and interoperability within and between Services.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Unmanned SyS Common Control (JUSC-2)		0.300	

The JROC validated the capability need for JUSC2 as an FY04 new start. The desired outcome of JUSC2 is to provide a reconfigurable and scaleable common control architecture, capable of concurrently managing large numbers of unmanned systems of all types, leveraging interoperability afforded by existing joint and coalition interfaces and message sets for unmanned systems. The primary outputs and efficiencies to be demonstrated by this project include more efficient management and improved overall operational effect through: (1) the ability to concurrently manage (in some cases, control) all unmanned systems deployed with Littoral Combat Ship (LCS) mission packages; (2) demonstration of NATO STANAG 4586 (UAV Control Standard) Level 3/4 control handoff of STANAG enabled unmanned aircraft between Army and Navy control stations; and (3) demonstrate the ability to hand-off control of unmanned surface vehicles (USVs) and unmanned ground vehicles (UGVs) to other services' Joint Architecture for Unmanned Systems (JAUS)-compliant control stations. Current transition plans include: JUSC2's Unmanned Vehicle Common Control (UVCC) software product - an integral component of the Navy's Littoral Combat Ship Flight 0. JUSC2 Common Unmanned Aerial Vehicle (UAV) Interface Segment (STANAG 4586 compliant ground station) - now a transition product that the Army's UAV Project Office will insert into the One System Acquisition Program. The user sponsor is U.S. Joint Forces Command and the lead service is the Navy.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Complete residual final MUA activities. Complete reporting efforts; provide final engineering packages, software, and evaluation results to LCS program. Complete the ACTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Special Operations Forces (SOF) Long Endurance Demonstrator (SLED)		5.000	

The JROC validated the capability need for SLED as an FY05 new start. The outcome of SLED is to demonstrate an unmanned vertical take off and landing vehicle (the DARPA developed A160

Hummingbird VTOL UAV) capable of flying long range (2000+NM/24+ hours) and employing a wide variety of adaptable payloads, supporting combating terrorism (CT), counter proliferation (CP), special reconnaissance (SR), direct action (DA), psychological operations (PSYOP), and other mission areas. Efficiencies and outputs will be evaluate the A160 for its capability to perform designated functions. Platform performance must be compatible with payload and mission requirements in terms of altitude, endurance, range, weight (platform and payload), and payload power. The payloads must meet mission requirements and be compatible with A-160 capabilities and constraints. Planned Transition is to integrate with USSOCOM components.
U.S. Special Operations Command is the user sponsor and lead agency.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Complete final MUA activities and reports. Update CONOPs. Perform Extended User Evaluation. Complete the ACTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Small UAV (SUAV)		3.700	1.700

The JROC approved the capability need for SUAS as an FY06 new start. The outcome of SUAS is to address Joint operational concerns noted during on-going operations through the integration of new technology across the entire class of Small UAVs. The outputs and efficiencies to be demonstrated are: technology insertions to provided measurably improved performance/logistical support in the following areas: Command, Control and Communications (C3); Payload Integration; Targeting; Platform Related Issues (power, propulsion, etc.); improved operator training though the use of integrated training programs with emphasis on simulation; improved and more efficient Tactics, Techniques, and Procedures (TTP) across the Services for small unit real-time reconnaissance and surveillance capabilities. New operational capabilities will be evaluated and no less than once per year. Transition strategy: FY2009/2010 is the transition period. The capabilities will be integrated into USSOCOM systems, and available for integration into all SUAS customers assets (spiraled out of the ACTD into the field as they become available). The User Sponsor and Lead agency is U.S. Special Operations Command (USSOCOM).
- FY 2007 Outcome - Refer to the ACTD R2a.
- FY 2008 Planned Outcome - Continue technology definition and cut in (spiral fielding). Continue TTP development and refinement. Continue CONOP refinement. Perform one limited assessment, one Interim Military Utility Assessment to support fielding of capabilities. Perform the final (culminating) assessment, capturing overall improvement to operational capabilities.
- FY 2009 Planned Output - MUA reporting, Extended Use (EU) and transition support of fielded technology and training packages will begin. The ACTD will complete in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Counter Bomb/Counter Bomber (CB2)		0.500	

The Joint Requirements Oversight Council (JROC) validated the capability need for CB2 as a FY03 new start. The outcome is to provide improved capabilities for military installations against the threat posed by terrorist delivered bombs and improvised explosive devices (IEDs). The capabilities include technologies for detection, identification, mitigation, and command/ control/ communications (C3); along with tactics, techniques, and procedures, and concepts for operations. The sponsoring Combatant Commands (CoComs) are USSOUTHCOM and USEUCOM. Other organizations involved as participants, users of capabilities, and/or observers include USCENTCOM, Department of Homeland Security, and US Coast Guard. The lead service is the U. S. Navy. The primary outputs to be demonstrated to the users and evaluated in the Military Utility Assessment (MUA) are 1) ability to perform surveillance on the movements of people and vehicles near the installation as possible precursor to the threat, 2) detection and identification of the threat device prior to blast, 3) mitigation of the bomb, and 4) C3 to tie together the people, systems, and data critical to the accomplishment of the mission. The efficiencies to be gained are 1) the ability to perform an important and increasingly critical mission that had little priority until a few years ago, 2) the ability to perform that mission at little or no increase in manpower to military force protection organizations, 3) the ability to reduce the vulnerability and casualties of the force protection personnel while performing this dangerous mission. The transition strategy is to roll CB2 capabilities into existing programs of record (POR) and acquisition program elements of Service force protection projects, and also to utilize the J34 sponsored Combating Terrorism Readiness Initiative fund. User data packages for each of the systems will be developed, along with a users' guide on how to select and introduce new technology for force protection. Four critical products from this ACTD have already been deployed to Iraq: 1) van-mounted backscatter x-ray for vehicle inspection, 2) vehicle under carriage video inspection systems, 3) infra-red imaging system, and 4) off-leash trained canines for explosives detection. Transition plans will include program of records for Anti Terrorism/Force Protection acquisition agencies in each of the 3 services, GSA, and the J34 Combating Terrorism Readiness Initiative Fund. Due to initiation of a newer JCTD called Joint Force

Protection Advanced Security System (JFPASS) and efforts of Joint Improved Explosive Device Organization (JIEDDO), the CB2 ACTD will complete one year early in FY08 vice FY09.
- FY 2007 Outcome - Refer to the ACTD R2a.
- FY 2008 Planned Outcome - Continue with EUE and transition activities for all Spirals and publish CB2 ACTD results. Early completion date is in FY 2008.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
FLM Small Diameter Bomb	4.000	6.200	1.300

The Joint Requirements Oversight Council (JROC) validated the capability need for FLM as a new start in FY06. The outcome of FLM is to provide Combat Air Force aircraft the ability to prosecute high-value targets in a collateral damage sensitive environment. FLM integrates a carbon fiber warhead case and the multi-phase blast explosive (MBX) onto the existing Small Diameter Bomb (SDB) I airframe. The FLM is not intended to replace SDBI but to complement it. FLM's sub-four meter accuracy will result in pin-point focused lethality with minimal collateral damage concerns. FLM is a four-year project under sponsorship of United States Central Command (USCENTCOM), with completion of development and demonstration by the mid-CY 2008, and fielding of approximately fifty (50) residual FLMs with continued contractor sustainability provided through mid-CY 2010. The primary outputs and efficiencies to be demonstrated in the JCTD Military Utility Assessment are (1) successful integration of the carbon fiber warhead and MBX onto the existing SDB I airframe with a fully functioning weapon and kill mechanism, (2) safe carriage and separation from F-15E, (3) to demonstrate FLM's sub-four meter accuracy, (4) the elimination of fragmentation as kill mechanisms in the FLM weapon integration design,(5) a full and complete characterization of FLM's capability against defined target set for USCENTCOM. The planned transition strategy is: upon Military Utility demonstration, enter into formal acquisition process at Milestone C for Low Rate Initial Production (LRIP) buys; Extended User Evaluation (EUE) of residuals by USCENTCOM; follow-on system development and demonstration, production, and fielding through service Program Executive Office/Program Managers (PEOs/PMs); submit funding for LRIP in FY09 with the targeted Program of Record: Small Diameter Bomb Program. The User Sponsor is USCENTCOM and the Lead Service/Agency is the U.S. Air Force.
- FY 2007 Output - Completed integration of technologies onto FLM. Complete telemetry, structural, modal, and autopilot testing and design. Completed static live fire tests to demonstrate low collateral damage kill capability of FLM.
- FY 2008 Planned Output - Final operational demonstration of FLM. Deliver approximately 50 residual FLMs to CENTCOM. Initiate 2-years of operational logistical field support. Begin FLM insensitive munition and hazard classification certification. Initiate preparation for formal acquisition program transition. Transition manager is 918th Armament Systems Group.
- FY 2009 Planned Output - Continue FLM residual weapon fielding support. Complete FLM insensitive munition and hazard classification certification. FLM JCTD scheduled completion is second quarter CY 2010.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Night Vision Cave/Urban Assault (NVCUA)		0.600	

The Joint Requirements Oversight Council (JROC) validated the capability need for NVCUA as an FY03 new start. The outcome of NVCUA is to demonstrate a suite of lightweight, soldier-borne sensor technologies, together with new Concepts of Operation (CONOPs) and Tactics, Techniques and Procedures (TTPs), to enable decisive overmatch for dismounted assault in subterranean and urban environments. Five-year project under sponsorship of U.S. Special Operations Command (USSOCOM), with completion of development and final demonstration in FY05, and final completion date in FY08. The lead service is U.S. Army. The primary outputs and efficiencies to be demonstrated in the Night Vision ACTD Military Utility Assessment are: 1) Increased capability for Special Operations Forces (SOF) to identify detected targets during Special Reconnaissance (SR) missions; 2) Increased capability for SOF during Direct Action (DA) missions; 3) Enhanced SOF capabilities to move and identify targets in low/no-light environments; 4) Enhanced SOF capabilities to move and identify targets in urban/restrictive terrain. Current Efficiency Goals: SWIR Standoff Identification Range - 2k = IR Detection Range; UCIR Detection Range (Cave Assault) 150m, 200m, 250m; UCIR Detection Range (Urban UGS) - 15m, 25m; Pd (Approach Sensors) -- 90% - 95%; STTW Detection Range -- 10m, 20m. Transition status: Long Range Identification (LRID) system was successfully demonstrated and is currently undergoing an Extended User Evaluation in Iraq for consideration for transition to Army Programs of Record (POR). Additionally, the NVCUA ACTD developed and demonstrated a Fast Obscurant Grenade (FOG) which Transitioned to the U.S. Army Joint Program Manager NBC Program Of Record and recently was approved for Milestone C procurement status. In addition, efforts are underway to provide selected

items (e.g., Combat Periscope, ENV Goggles) for operational use on a rapid-equipping basis.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Complete interim capability/residual support. Complete transition to designated Programs of Record. Complete the ACTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Extended Space Sensors Arch (ESSA)		1.600	1.700

The Joint Requirements Oversight Council (JROC) validated the capability need for ESSA as a FY06 new start. The ESSA ACTD is creating a joint, distributed, net-centric space surveillance framework. The expected outcome of the ESSA ACTD is a flexible, responsive and scalable command and control family of systems which enhance United States Strategic Command's (USSTRATCOM) Space Situational Awareness (SSA) capability. ESSA is a three-year ACTD sponsored by USSTRATCOM and Commander Joint Forces Component Command Space (CDR JFCC SPACE). The ESSA Operational Utility Assessment (OUA) is planned for mid FY 2009, and the capability will transition to Programs of Record (PORs) by the end of FY 2009. The lead service is the U.S. Air Force. The ESSA ACTD will develop and demonstrate a net-centric sensor architecture which provides more timely SSA information via the Secret Internet Protocol Router Network (SIPRNET) to decision makers. ESSA efficiencies will include: increased timeliness for delivering data products from sensor to command and control (C2) node; ability of netted sensors to perform more efficient strategies for searching, tracking, identifying and monitoring space object population; ability of C2 node to observe sensor operations in real-time and make rapid decisions in response to space events; and the ability of an architecture to support both theater and strategic users. While this ACTD does not answer all of the SSA gaps and shortfalls identified in USSTRATCOM's Space Control Joint Capability Document (JCD), it does address the number one priority identified in the JCD of synergistically exploiting all available SSA data.
- FY 2007 Output - The focus in FY07 was on the first of three demonstrations and supporting programmatic milestones. The management team wrote, coordinated, and signed the ESSA Management Plan. The transition team began developing a comprehensive transition plan. The operations team completed the Demonstration Execution Document (DED) and data gathering checklists and methodology for Demonstration 1. On 13 Dec 06, members of the ESSA management team, including the Massachusetts Institute of Technology, Lincoln Laboratory (MIT/LL), successfully completed the ESSA ACTD Demonstration 1. The objective of Demonstration 1 was to expose operationally relevant information and data from a radar imaging sensor via net-centric means. By using web-based applications, end users at Joint Space Operations Center (JSpOC) at Vandenberg Air Force Base (AFB), CA and the Space Situational Awareness Test Bed (SSATB) at Schriever AFB, CO were able to subscribe, retrieve and monitor wideband imagery and other products from the Haystack Auxiliary (HAX) radar imagery sensor. This demonstration was conducted over the Defense Research and Engineering Network (DREN). On 20 Apr 07, the ESSA SIPRNET risk reduction effort successfully validated the migration of the ESSA capabilities from the DREN to the SIPRNET. HAX radar tasking, imagery and associated metadata were transferred via the SIPRNET to multiple users simultaneously within similar timeliness as observed during Demonstration 1.
- FY 2008/2009 Planned Output - The focus for FY08 will center on two major topics: demonstration and transition. The Operations Integrated Products Team (Ops IPT), along with the 46th Test Squadron will draft the assessment objectives and sub-objectives that will validate the Critical Operating Issues (COIs). This information will then be incorporated into a comprehensive DED and data gathering checklists and questionnaires. Demonstration 2, which will include deep-space satellite monitoring, change detection and satellite conjunction analysis, is scheduled for 1 - 5 May 2008. The ESSA ACTD will culminate in March/April 2009 with a final demonstration. This demonstration will center on the characterization of a New Foreign Launch (NFL). The Ops IPT will lead the objective/sub-objective development, as well as the DED and associated assessment methodology. The ESSA transition manager, with the help of the entire ESSA management team, will finalize the transition plan for migrating ESSA ACTD capabilities into the hands of the warfighter. The transition plan will include two critical portions: the extended use of residuals and transition. The extended use of residuals, a two year period beginning April 2009, will increase the number of space surveillance network (SSN) sensors connected in a net-centric service orientated architecture and define an operationally focused concept of operations and tactics, techniques, and procedures. The transition period will begin after the extended use of residuals period has ended. During the transition period, additional SSN sensors will be added to the net-centric C2 network; however, detailed oversight and procedural development support will become the responsibility of the warfighter. The ACTD will complete in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Actionable Situational Awareness Pull (ASAP)		0.600	

The JROC approved the capability need for ASAP as an FY05 new start. The ASAP output will develop, integrate, demonstrate and transition software that provides a "Smart Pull" capability to the tactical, operational and / or strategic user on the Global Information Grid (GIG) for accessing critical situation awareness information resident on distributed databases. Utilizing the Net-Centric Enterprise Services (NCES) core service architecture and the Net-Enabled Command Capability (NECC), a "Smart Pull" service will be operationally demonstrated and transitioned into NECC and the Integrated Broadcast System (IBS). ASAP's outputs and efficiencies include (1) increased percentage of useable data available to the user, (2) increased performance through decreased latency of data, (3) percentage of increase in data obtained via "pull" vice "push" procedures, and (4) increased interoperability with coalition forces by use of XML Common Message Format Standards. Expected efficiencies (to be measured and verified) will include response time performance on the return of data as a web service. Planned Transition: Software tools and documentation will transition to Net-Enabled Command Capability (NECC) and the Integrated Broadcast System (IBS) starting in FY 2007. The ASAP User Sponsor is the U. S. Pacific Command (PACOM) and the lead service/agency is the Defense Information Systems Agency (DISA).
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Finalize CONOPs / TTPs, training package and recommendations for DOTMLPF. Complete transition ASAP ACTD products to programs of record / programs pending results of JMUA. Complete the ACTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Regional Maritime Awareness Capability (RMAC)	2.234	2.200	

The JROC approved the capability need for RMAC as an FY06 new start. RMAC is a coordinated DoD and Department of State project. The outcome of RMAC will demonstrate and transition a regional maritime awareness solution set consisting of sensors and their indigenous processors, communications systems, and software. The initial application of the capability will enable friendly nations in the Gulf of Guinea region to develop maritime domain awareness in the regional waters, and share their data with each other and with the U.S. This solution set will be equally applicable to local sensor sites, national operations centers, regional coordination centers, and external users. The sensors and processors include Automated Information System (AIS), radar, video cameras, and night vision devices. Communications will be done through UHF/VHF Radios, W3C-compliant, commercially secure, IP-based networks and cell phones. RMAC's outputs and efficiencies include surveillance, tracking, fusion and analysis, vessel tracks, and multi national information sharing and collaboration capabilities. The current Transition Strategy will deliver: 1) Residuals: AIS, radar, video cameras, night vision devices, radios, cell phones; 2) Documentation: training package, software / hardware specifications, site surveys, frequency management plan and user maintenance manuals, CONOPS / TTPs; 3) Post-JCTD acquisition strategies for procurements of capability will be developed by host nations and U.S. Program Managers pending outcome of demonstrations and assessments. The User Sponsor is the U. S. European Command (EUCOM) and the lead service is the Navy.
- FY 2007 Output - Complete definition of requirements. Conduct additional site surveys in participation host nations, and develop coordinated installation plans with host nations. Finalize procurement of RMAC capability. Initiate development of training package. Continue development of CONOPS, Tactics, Techniques, and Procedures (TTP) and architecture. Conduct technical testing and demonstrations. Install baseline operational capability (BOC) equipment and software systems, and conduct initial checkout tests.
- FY 2008 Planned Output - Finalize requirements definition and architecture. Complete installation of RMAC capability. Continue development of CONOPS, TTP, and training package. Conduct operational demonstrations and Coalition Utility Assessment (CUA) of RMAC capability including local harbors / ports, National Operational Centers (NOC), Regional Coordination Center (RCC) and external users. Complete the JCTD in FY2008.
- FY 2009 Planned Transition Output: RMAC will sustain operational capabilities and complete transition planning.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Coalition Secure Management and Operations System (COSMOS)		1.900	1.900

The Joint Requirements Oversight Council (JROC) validated the capability need for COSMOS as a FY05 new start. The COSMOS ACTD output will be a pilot implementation of the Multilateral Interoperability Program (MIP) specifications for C2 data sharing (specifically the Command and Control Information Exchange Data Model (C2IEDM) and the Information Exchange Mechanism

(IEM)) in the Combined Enterprise Regional Information Exchange System (CENTRIXS) coalition network environment. COSMOS is planned for a final demonstration in the second quarter of FY08, with sustainment of the demonstrated capabilities by DISA through FY09. The expected output is identifying necessary and sufficient conditions for implementing the MIP specifications, leading to rapid, secure protected sharing of critical C2 information to and among coalition partners' organic command and control (C2) systems on a single and secure integrated coalition network. The expected efficiency is substantial reduction of textual message exchange required to establish and maintain situational awareness among coalition commanders, improved collaborative decision making, reduced confusion, uncertainty and delay in combat and crisis operations and effective bridging of coalition sourced information with US Global Information Grid (GIG) Network Centric Enterprise Services (NCES) for two-way information exchange, when approved cross domain solutions are available. Transition to programs of record is planned for FY09, targeted at the emerging Multinational Information Sharing (MNIS) initiative. A policy enforcement capability for discrete rapid information sharing will be implemented in enterprise and theater-level coalition networks (i.e., CENTRIXS migrating to an emerging program based on the Joint Requirements Oversight Council (JROC) approved Multinational Information Sharing (MNIS) Initial Capabilities Document (ICD)). The use of Open Source Code for software-based capabilities will enable improved capabilities to be inserted into programs of record for coalition information sharing, network services, and next generation command and control, including those of Allies and Coalition partners. COSMOS is a three year ACTD co-sponsored by U. S. Pacific Command (PACOM) and U. S. European Command (EUCOM). The Defense Information Systems Agency (DISA) is the lead agency.

- FY 2007 output - Refer to the ACTD R2a.
- FY 2008 Planned Output: The final demonstration for Military Utility Assessment (MUA) in a USEUCOM venue is planned for the fourth quarter of FY08. Use of the foundational MIP specification based C2 information exchange between coalition partners able to implement the necessary and sufficient conditions and security solutions in stabilization and recovery operations will provide increased political confidence, technical experience and collaborative abilities. The ACTD will complete in FY2008. Programmatic focus in FY08 is FY10 budget documentation to successfully transition sustainment of the demonstrated capability to programs of record. DISA will sustain the demonstrated militarily useful functionality until transitions to programs of record in FY09.
- FY 2009 Planned Output: The primary focus of activities in FY09 is final documentation and transition of functionality to programs of record. The ACTD completes in FY09.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Medical Situational Awareness in Theater (MSAT)		2.500	

The Joint Requirements Oversight Council (JROC) validated the capability need for MSAT as a FY05 new start. The outcome is to provide improved capabilities for medical situational awareness to commanders with integrated and timely health information fused with non-medical operational information incorporating a tailored decision support tool to make critical strategic and tactical decisions in a deployed environment. This capability will provide a fusion of medical data, personnel location information and health threat intelligence for situational awareness in theater. The capabilities include technologies for a web services environment fusing intelligence, chem.-bio threat, environmental health, unit location information; risk assessment; and decision support tools. The primary outputs to be demonstrated to the users and evaluated in the Military Utility Assessment (MUA) are 1) ability to perform surveillance of medical threats in deployed environments, 2) model threat dynamics, and 3) conduct risk assessment using decision support tools. The efficiencies to be gained are 1) the ability to provide commanders with a more complete medical situational awareness in an actionable time-frame, 2) the ability to make knowledge-based decisions with an automated decision-making tool tailored to medical operations. The transition strategy is to incorporate MSAT system tools and operational concepts, tactics, techniques and procedures into theater medical operations through GCSS (Global Combat Support System) and Theater Medical Information Program programs of record. The sponsoring Combatant Command (CoCom) is U. S. Pacific Command (PACOM). Other organizations involved as participants, users of capabilities, and/or observers include: Armed Forces Medical Intelligence Center; OSD Health Affairs; Joint Staff Surgeon and the Defense Information Systems Agency. The executive agent is the Joint Staff, Logistics Directorate, Health Services and OSD Health Affairs.

- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Conduct final spiral demonstration and assessment with inclusion of medical unit readiness, adaptive planning capabilities and decision support tools, with integration of mapping tools into the GCSS and Theater Medical Information Program web services environment. In FY 2009 transition to the Theater Medical Information Program and GCSS programs of record and ACTD completion.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Node Mgt and Deployable Depot (NoMaDD)		1.900	

The Joint Requirements Oversight Council (JROC) validated the capability need for NoMaDD as a FY06 new start which is demonstrating technologies to address critical delays in getting needed supplies to the warfighter. Loss of visibility of items in the distribution pipeline and the inability to provide realistic delivery dates or effectively adjust the flow of commodities for delivery at the right place at the right time continue to impact the effectiveness of our forces. Node Management will provide distribution node managers the visibility needed to make logistics decisions to positively affect the distribution system. Deployable Depot will provide the ability to quickly establish a supply and distribution center in theater to control the physical flow of materiel moving into and through the theater. Together, these capabilities will provide the logistic responsiveness necessary to support our warfighters in any theater of operation. NoMaDD's effectiveness will be measured through its contribution to sustained logistics for major military deployments. Specific outputs and efficiencies will include: 1) increased accuracy in accounting for supplies resulting in reductions in customer wait time; 2) improvements in required airlift to support sustainment; 3) reductions in repeat requisitions. The planned transition for NoMaDD: Node Management will transition to the Army's Battle Command Sustainment Support System and U.S. Transportation Command's (TRANSCOM) Intelligent Road/Rail Information System (IRRIS) Program which will provide a web based version on Node Management. The Deployable Depot will become a program of record and be managed by DLA. The Combatant Command/User Sponsor is TRANSCOM and the lead service/agency is Defense Logistics Agency (DLA).

- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Continue spiral development of BCS3 Node Management capabilities and development of the IRRIS web-based capability. Integrate BCS3 and IRRIS capabilities to ensure data and views are consistent. Perform the final Joint Military Utility Assessments of the Deployable Depot in March - April timeframe.
- FY 2009 Planned Output - Complete development and integration of BCS3 and IRRIS Node Management capabilities and conduct a final Joint Military Utility assessment. Complete the JCTD in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Enable Theater Access (JETA-SPOD)		3.700	0.600

The Joint Requirements Oversight Council (JROC) validated the need for JETA-SPOD capabilities as a FY06 new start. The outcome of JETA-SPOD is to develop and demonstrate: a Lightweight Modular Causeway System (LMCS) transportable by and employable from intra-theater sealift vessels such as the JHSV or other current Army/Navy watercraft; and an austere port Decision Support Tool for selection of optimal sites from multiple austere SPOD options. The capabilities proposed for development in this ACTD will optimize the use of the Joint High Speed Vessel (JHSV), current Army/Naval watercraft, and Lines of Communication (LOC) bridging requirements by providing increased and more rapid flow of combat power and sustainment through multiple theater austere seaport locations. This provides to Joint/Combined Force (J/CFC) commanders a means to mitigate threat anti-access activities and increases flexibility to conduct operational maneuver from strategic distances. JETA-SPOD ACTD is a three-year project under sponsorship of U.S. Pacific Command, with completion of development and demonstration by end of FY2008; and transition to U.S. logistics systems as early as FY2009. The lead service is Army. The primary outputs and efficiencies to be demonstrated in the ACTD Military Utility Assessment (MUA) are: 1) the LMCS will reduce weight, volume, and deployment time compared to existing military causeway and bridging systems; 2) the operational parameters for evaluating the military utility of the LMCS are based on a quantitative and qualitative comparison to the capability provided by the existing Modular Causeway System (MCS); 3) LMCS will result in a reduction in weight and volume by 50% over the MCS; a reduction in deployment time by 50% over the MCS; and elimination of in-water connections; 4) the Decision Support Tool capability equates to an increase in availability of throughput prediction information for 50-80% of worldwide small ports; and 5) the combination of LMCS and the Decision Support Tool includes a five-fold increase in the number of JHSV-compatible ports and doubling of the port throughput rate. LMCS Output includes incorporation of state-of-the-art connector and tensioning technology; innovative emplacement and recovery

system applicable to multiple military/civilian platforms; innovative self-locking and strap tensioning technologies; high strength fabrics for robust, lightweight floatation technology that quickly inflates/deflates for rapid LMCS emplacement and recovery; puncture/abrasion resistant floatation components; lightweight decking materials; and common 8x20 rapid transport footprint design. The efficiency is that the transport (land/sea) cost of moving causeway capabilities into austere SPODs will be significantly reduced; and causeway capabilities will arrive in theater more rapidly with a smaller logistics footprint. Austere Port Decision Support Tool Output includes query-able austere world port data; a port characterization model; rapid port enhancement tool; austere port throughput simulation; a comprehensive set of environmental and physical factors affecting ingress/egress throughput rates; and parametric algorithms for throughput rates in small ports and rates for planning and execution of vessel offload operations; developed with an open source tool; user friendly Graphical User Interfaces (GUI); and runs on a laptop computer. The efficiency is that the warfighter will possess flexibility and a broader range of options to establish austere seaports as strategic or operational maneuver entry points with a greater assurance of success. The transition strategy for LMCS and the Decision Support Tool is to establish Programs of Record under the guidance of two Transition Managers: Product Director, Army Watercraft Systems (PD AWS) and USTRANSCOM, respectively.

- FY 2007 Output - Refer to the ACTD R2a.

- FY 2008 Accomplishments _ Develop final LMCS and Decision Support Tool CONOPS; finalize extended user evaluation and Interim Transition Planning; conduct LMCS full-scale functional system demonstrations conduct CONUS LMCS testing; complete system integration and incorporate lessons learned; complete LMCS fabrication; conduct Decision Support Tool Limited User Evaluations (LUE); deliver final version of Decision Support Tool; complete Training Plan; conduct user training in preparation for MUA; complete MUA/Final Demonstration in Sep 2008; develop final MUA and ACTD report; and plan transition of LMCS and Decision Support Tool to Programs of Record in FY 2011.

- FY 2009 Planned Output - Deliver pre-transition and interim capability/residuals to the user (includes LMCS system and Decision Support Tool with Final Data Set); plan the use of LMCS and Decision Support Tool in exercises for continued refinement and continued socialization for transition; JETA-SPOD ACTD scheduled completion date is September 2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Coalition Joint Spectrum Management and Planning Tool (CJSMPT)	0.919	0.500	

The Joint Requirements Oversight Council (JROC) validated the capabilities needed from CJSMPT as an FY06 new start. The outcome of CJSMPT is a force structure driven database of basic friendly communications and counter-Improvised Explosive Devices jammers with an associated software based spectrum management tool to enable the Warfighters to coordinate electromagnetic spectrum resources usage in a timely way. CJSMPT is a three year project under the sponsorship of US European Command with direct engagement by US Central Command, with phased software deliveries and demonstrations in FY07 and FY08. The US Army is the technical lead Service for the JCTD and has agreed to sustain the delivered capability in the USEUCOM and USCENTCOM theaters until transition of the initial capabilities into the Defense Information Systems Agency (DISA) as the lead Agency for Global Electromagnetic Spectrum Information System program. The primary output and efficiencies to be demonstrated in the JCTD Military Utility Assessment are (1) interfaces to currently disparate and isolated data bases into a virtual knowledge repository, (2) interactive emitter, receiver and terrain models permitting user visualization of spectrum usage, and (3) spectrum use plans for operational coordination, scenario development and course of action evaluation.
- FY 2007 Output - Initial demonstration of basic counter-IED, friendly communications coordination and visualization tools applied to priority Warfighter scenarios. Establish and conduct operator training. Integrate CJSMPT software capability into USCENTCOM pre-deployment training for spectrum managers and electronic warfare officers.
- FY 2008 Planned Output - Refine phase one software capability and expand to additional friendly force spectrum usage. Expand mobile training, classroom instruction and doctrine for spectrum coordination with operational scenarios. Conduct Joint Military Utility Assessment of capabilities delivered. Coordinate sustainment activities within US Army and transition documentation with DISA. Complete the development of CJSMPT software capability and demonstrations by December 2008. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Event Management Framework (EMF)		2.500	1.300

The Joint Requirements Oversight Council (JROC) validated the capability need for the EMF ACTD as a new start in FY06. The goal of EMF is to demonstrate the ground breaking capability of vertical and horizontal sharing of heretofore stove-piped information among organizations within and outside of DOD by emphasizing EMF policies; operational concepts; and tactics, techniques and procedures. In handling a terrorist event or incident, a horizontal information focus among Federal agencies is necessary during the interdiction phase of an incident. During response and recovery phases, a vertical information sharing focus among Federal, state, and local agencies is needed.

A coherent interoperable information sharing mechanism is needed to: (1) Discover and share information resources throughout the incident based coalition domain; (2) Recognize the changing value of temporal information; and (3) Analyze and synchronize the large amounts of data relative to an event. All COCOMs, as well as their non-DoD partners, have made large investments in command and control (C2) and collaboration coordination tools. But, to date, effective integration of those investments has been sub-optimal. The event management framework consists of policies, operational concepts and technologies to ensure decision makers can build a situational picture of an event with all relevant facts. The primary outputs and efficiencies to be demonstrated in the ACTD Military Utility Assessment (MUA) are: 1) Integrated EMF policies; operational concepts; and tactics, techniques and procedures; 2) Improved and more timely incident and information correlation to "connect the dots"; 3) Faster visualization of analytic results to aid decision makers in event assessment; 3) Addition of EMF databases and engine servers to cache data; 4) Capability to share information and analytical results across COCOMs, Coalitions, Services, and its interagency partners; 5) Reduced time required for event based decision making. EMF is a three-year project under the sponsorship of the United States Northern Command. The lead agency is the Defense Information Systems Agency (DISA).

- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Spiral 3: Adapt ontology, data models, and smart agents for selected Communities of Interest. Increase partner base. Conduct JMUA. Harden software.
- FY 2009 Planned Output - Assuming a successful JMUA, transition is planned for FY09. Transition paths are to be determined. One possibility is transition to a DISA Program of Record such as NECC or NCES. The EMF ACTD is scheduled to complete in September 2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Theater Effects Based Operations (TEBO)		4.400	2.700

The Joint Requirements Oversight Council (JROC) validated the capability need for the TEBO ACTD as a new start in FY 04. The outcome of the TEBO ACTD is to provide Combatant Commanders with enhanced capabilities to analyze, plan, execute, and assess Effects-Based Operations (EBO) at the strategic and operational levels by integrating computer-aided decision support tools, Concept of Operations (CONOPS), and Tactics, Techniques and Procedures (TTPs) into the command's Mission Architectures. The TEBO ACTD is a six-year project under the sponsorship of Pacific Command and Combined Forces Command/U.S. Forces Korea (CFC/USFK) as the Operational User. Completion of development and demonstration is planned for by the end of CY 2009 with transition to the Net Enabled Command Capability (NECC) System of Record in 2010. The lead service is Army. The primary outputs and efficiencies to be demonstrated in the TEBO ACTD Military Utility Assessments are (1) Exploit existing knowledge base(s) of strategic, operational and tactical environments (e.g. Operational Net Assessments [ONA] - critical capabilities and vulnerabilities, centers gravity [COG] and nodal analysis, (2) Facilitate collaborative effects-based campaign planning within a combined/Joint environment, (3) Support execution with prioritization of strategic and operational levels of effort, synchronization of actions, and battle tracking, (4) Comprehensively assess and forecast progress toward the desired end state by analyzing observed direct and indirect effects.

- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Conduct Operational Demonstration 5 (RSOI 08 and UFL 08) Final enhancement and integration of COA planning capabilities through the use of modeling and simulation; final military utilitary assessment; Begin transition of TEBO Knowledge Management Services into Army Battle Command Systems (ABCS) Program of Record.
- FY 2009 Planned Output - Begin transition to Net Enabled Command Capability (NECC) Program. Scheduled completion of the ACTD in September 2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Smart Threads Integrated Radiation Sensors (STIRS)	0.750	6.100	3.800

The Joint Requirements Oversight Council (JROC) validated the capability need for Smart Threads Integrated Radiological Sensors (STIRS) Joint Capabilities Technology Demonstration (JCTD) as an FY07 new start. The objective of the STIRS JCTD is to demonstrate and transition the capability to detect, identify, and disseminate radiological information on land, maritime, and airborne environments in order to enhance reconnaissance and surveillance operations. The STIRS JCTD suite will use a combination of proven and innovative radiation detection capabilities, networked through open-architectures, to aid in the combating of weapons of mass destruction. These capabilities have global applicability with forward-deployed Combatant Command (COCOM) ground forces (US Army), U.S. Naval Maritime Components, and US Coast Guard elements in the transient areas, and potentially, National Guard WMD Civil Support Teams (CST) within the homeland regions. In all mission areas, the systems will be networked and radiological information will then be provided through existing tactical and over-the-horizon command and control (C2) networks.

STIRS is a three-year JCTD sponsored by the US Northern Command (NORTHCOM); DTRA is Lead Agency and US Naval Sea Systems Command (NAVSEA O4LR) and the Joint Program Executive Office for Chemical and Biological Defense (JPEO CBD) are co-Transition Managers. The STIRS operational demonstration/exercise (ODX) phase will complete in FY 2009 and transition to the user community will begin in FY 2009 through FY 2010.

The STIRS JCTD capabilities and attributes below are the basis for the Joint Military Utility Assessment (JMUA) measures of effectiveness (MOEs) and measures of performance (MOPs), are:
a. Detect and identify concerning R/N material/threats.
- Attributes: precision, spectrum, quality, timeliness.
b. Correlate and fuse information to develop shared understanding.
- Attributes: quality, scalable, tailored to users.
c. Enable support of/execution across, spectrum of battlefield environments (land, sea and airborne).
- Attributes: robustness, persistence.
d. Collaborative, networked joint and interagency information sharing.
- Attributes: networked, interoperable, and fully integrated.

- FY 2007 Outcome - Requirements validation and refinement of STIRS capabilities into a man-portable detection system (MPDS) and vehicular- mounted detection system (VMDS) to confirm presence of R/N materials. Begin STIRS integration into line-of-site and over-the-horizon C2 networks to send STIRS data to required users in near real-time. Conducted initial technical testing and system characterization.
- FY 2008 Planned Outcome - Conduct Aerial Radiation Detection, Identification and Measurement System (ARDIMS) technical testing and system characterization. Continue MPDS and VMDS technical testing, followed by operational unit training. Plan and conduct operational demonstrations/exercises (ODX) with 20th Support Command (CBRNE) (with MPDS and VMDS capabilities), and US Navy SURFLANT Boarding Teams (MPDS capabilities).
- FY 2009 Planned Outcome - Conduct operational demonstrations/exercises (ODX) with ARDIMS capabilities (payload/pod) supporting interdiction missions, and post-event radiation mapping/detection capability utilizing either a manned and/or unmanned aerial platform. The JCTD will complete in FY2009.

The STIRS residuals will provide limited initial operational capability to units/joint Warfighters. The planned STIRS JCTD residuals include: 44 man-portable detection systems (MPDS); two vehicular mounted detection systems (VMDS); two Airborne Radiological Detection, Identification, and Measurement System (ARDIMS). Additionally, the STIRS JCTD will produce applicable CONOPS, TTPs, and DOTMLPF Change Recommendations.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Mapping the Human Terrain (MAP-HT)	0.500	2.700	2.600

(U) The Joint Requirements Oversight Council (JROC) validated the capability need for MAP-HT as a FY07 new start Joint Capability Technology Demonstration. The outcome will provide improved capabilities to effectively collect, consolidate, visualize and understand open source socio-cultural (green data) information to assist Commanders understanding of the human terrain in their Area of Responsibility (AOR). MAP-HT JCTD will develop and demonstrate an integrated, open-source, spatially/relationally/temporally referenced human terrain data collection and

visualization toolkit to support Brigade Combat Teams (BCT)/Regimental Combat Teams (RCT) in understanding the human terrain in which they operate. The overall project context for MAP-HT is development and deployment _by, through, and with_ deployed units in theaters of operations. The primary outputs to be demonstrated to the users and evaluated in the Military Utility Assessment are: (1) provide a stand-alone toolkit to collect/visualize socio-cultural information in geospatial and social network contexts at the unclassified level, (2) provide standard operating procedures (SOP) and concept of operations (CONOPS) , as well as tactics, techniques and procedures (TTP), (3) provide training on-line and manuals on the use of the system, (4) establishes direct cultural support to BCT/RCT commanders and interagency end-users which will minimize loss in continuity between unit relief in place/transfer of authority.
(U//FOUO) The MAP-HT Transition Sponsor is USA Distributed Common Ground Station Program of Record (DCGS-A POR). The sponsoring Combatant Command (CoCom) is U.S. Central Command (CENTCOM). Other involved organizations include the U. S. Marine Corps, U. S. Special Operations Command (USSOCOM), Defense Intelligence Agency (DIA), National Security Agency (NSA), etc. The U.S. Army is the lead Service.

- FY 2007 Output: First prototype-baseline, Module 0.0, of the MAP-HT toolkit is already being used by the 4th BDE, 82nd Airborne Division in OEF. Next prototype, Module 0.5, is scheduled to go into Iraq in August 2007 with five Human Terrain Teams. Results will be used to update the system for ultimate use and distribution between Services, Agencies and CoCOMs in theater. Prepare assessment plan with Operational Manager. Implementation Directive signed and approved by all stakeholders. Draft Management Plan and Transition plan.
- FY 2008 Planned output: Module 1 will include baseline plus knowledge discovery and advanced visualization/analysis tools with system hardening. Complete toolkit development, transition plan, and assessment plan for the final Joint Military Utility Assessment (JMUA).
- FY 2009 Planned Output: Transition to DCGS-A and PEO IIS/SOJICC. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Multi-Mission Electro-Optic Sys. (JMMES)	2.400	5.000	5.100

The Joint Requirements Oversight Council validated the capability need for JMMES as an FY-07 new start. The outcome of JMMES is demonstration and transition of airborne sensors and automated processing for automatic detection of items of interest for Joint Service, Coalition, and Interagency partners. The JMMES project will demonstrate use of advanced multi-spectral sensors in an aircraft turret compatible with existing turret mounts in US Navy, US Army, Drug Enforcement Agency, and British and Canadian aircraft. The project will develop and demonstrate automatic processing and automated operator cueing for targets such as submarines, mines, targets under trees, illicit crops, and search-and-rescue targets at sea. The primary outputs and efficiencies to be demonstrated in JMMES Military Utility Assessments are (1) ability of JMMES to recognize targets of interest, in terms of (a) percent of auto detections and auto cues that are relevant, (b) distance error of auto detect and auto cue reports, (c) timeliness of reports (seconds) to decision makers; and (2) ability of JMMES to defeat denial and deception efforts, in terms of (a) percent of denial and deception efforts defeated, (b) where and when JMMES applies (operating environments, seasons, time of day, range, etc.), (c) percent of time operable during missions, and (d) reliability and logistic support requirements. JMMES is a 3-year project sponsored by U.S. Pacific Command and U.S. Southern Command. Initial capabilities will be demonstrated and operated in FY07, with demonstrations against additional targets with additional aircraft types in FY08 and FY09. Transition activities began in FY07, leading to firm transition to programs of record in Program Objective Memorandum 2010. The lead Service is U.S. Navy.
- FY 2007 Output - Upgraded existing sensor suites to second generation for JMMES applications, integrated sensor and processing systems aboard selected aircraft. Conducted data collection and assessments for anti-submarine warfare missions, and begin algorithm development for other targets. Began Concept of Operations and system architecture documentation. Submitted POM documentation for transition to two Navy Programs of Record (POM 10).
- FY 2008 Planned Output _ Integrate third generation sensor suites. Flight test second generation systems, collect data for algorithm development and test. Execute JMMES integration into additional aircraft types for mine detection missions, search and rescue missions, counter concealment and deception (land targets) missions, illicit crop detection, and other missions. Complete initial algorithm development for the additional missions and conduct data collection and assessment trials, including interagency and coalition partner participation. Follow-up POM-10 submissions as needed.
- FY 2009 Planned Output - Complete multi-aircraft/multi-mission assessment trials and draft Military Utility Assessment. Complete Concept of Operations, Tactics/Techniques/Procedures, and System Architecture documentation. Support ongoing transition activities into programs of record. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Maritime Auto Super Track enhance Reporting (MASTER)	2.000	5.600	3.100

The Joint Requirements Oversight Council (JROC) validated the capability need for MASTER (Maritime Automated Super Track Enhanced) as an FY07 new start. The initial goal of MASTER is to demonstrate a set of technologies with associated CONOPS, which provide automatic tracking of ship traffic using both unclassified and classified methods and which will provide a tangible improvement of United States maritime domain awareness on a global-basis. The MASTER JCTD will also provide a common set of Tactics, Techniques and Procedures (TTPs) to the Intelligence Community (IC) that will allow adoption of this new capability across the IC. The primary outputs and efficiencies to be demonstrated in the Military Utility Assessment (MUA) are to develop and deploy a persistent maritime awareness capability for the analyst, warfighter and decision maker that enables: (1) significant increase in worldwide, multi-INT vessel tracks using information sources from SCI/Secret/Unclassified-levels and dissemination of these "Super Tracks", to operational users at the JWICS and Secret security levels; (2) percent decrease in the time required for an intelligence analyst to assemble the maritime awareness picture of ships using track , cargo and people information ; (3) percent increase in the ability of an analyst to determine ship threat profile (friend or foe) based on ship track, cargo and people information at the JWICS level; (5) percent increase in number of maritime awareness entities (ship, people, cargo, infrastructure) and the ability to manually and automatically fuse the data. The JCTD Residuals include: 1) Multi-INT fusion for worldwide MDA tracks with associated metadata; 2) web portal at the JWICS level; 3) SOA at JWICS level; 4) Alarms/alerts notification methodology; 5) Operationally tested CONOP for a 24/7 worldwide capability. MASTER is a three-year JCTD under the sponsorship of US Northern Command (NORTHCOM) and U.S. Navy, with completion of development and demonstration by the end of FY 2009 and transition to the IC through ONI beginning in FY 2009. The lead Service is Navy.

- FY 2007 Output - Worldwide tracking, user access via a JWICS web portal and an initial set of user definable alarms focused on ship tracking.
- FY 2008 Planned Output - Worldwide multi-INT tracking, enhanced web portal, cargo information at the JWICS level, initial JWICS level SOA, linkage of vessel and cargo alerts; Conduct Technical Demonstration One & Two; Conduct Operational Demonstration One
- FY 2009 Planned Output - Conduct Technical Demonstration Two; Conduct Final Operational Demonstration of MASTER with enhanced techniques for analytical user, and transition and operational users; publish Joint Military Utility Assessment (JMUA). Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Internet Protocol Router in Space (IRIS)	2.000	5.000	5.100

The Joint Requirements Oversight Council (JROC) validated the need for capability from IRIS as a FY07 new start. IRIS leverages a planned launch of a commercial communications satellite to introduce Internet Protocol (IP) routing and cross-banding between C-band and Ku-band transponders. The IRIS outputs and efficiencies include (1) demonstrate the capability to collaborate with industry in leveraging the commercial acquisition processes to provide near-term, space-based, IP routing network capability, (2) demonstrate the capability via a commercial payload to conduct on-board IP packet routing communications from a geostationary orbit, (3) explore and incorporate a decision process to determine which commercial SATCOM users should leverage the IRIS capability. USSTRATCOM is assigned responsibility for global network operations, and as the operational user sponsor seeks to improve network reliability and endurability through dynamic topology updates (multiple transport paths) and improved collaboration and interoperability among info sources and users (e.g., sensors, soldiers, command centers at Joint, Allied and Coalition levels). The Defense Information System Agency (DISA) is the lead Service and will transition the demonstrated commercial capability into contracting language for future services subscription in support of operations, including integration of IRIS services into existing network architectures beyond the IRIS JCTD.

- FY 2007 Output - Develop the draft CONOP and conduct a scenario-based limited military utility assessment that will simulate the use of the IRIS capability.
- FY 2008 Planned Output - Validate and verify draft CONOP and demonstration architectures to enable a limited military utility assessment of an emulated IRIS capability. Participate in the industry led end-to-end IRIS technical capabilities demonstration with representative hardware prior to IS 14 launch.
- FY 2009 Planned Output - Launch of the IS 14 spacecraft is projected for the 1st quarter FY2009. Conduct a live scenario and capability based demonstrations culminating in a final military utility assessment of the IRIS JCTD. The IRIS JCTD will leave behind the IRIS capability on a fee for service basis to provide a space based routing enterprise solution that enables video, voice and data

network services. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Coalition Mobility System (CMS)		2.000	

The Joint Requirements Oversight Council validated the capability need for CMS as an FY07 new start. The outcome of CMS is to develop the capability for rapid coordination of coalition movement execution. CMS will integrate selected, operationally relevant data from US systems with data sources used by coalition partners to establish a working coalition environment, which meets the needs of US and CTF decision makers. The primary outputs and efficiencies to be demonstrated in the JCTD are: 1) US operators gain access to coalition movement data (military and commercial) using familiar US national systems (Single Mobility System, Global Transportation Network, etc.), 2) Supports the Common Operating Picture for Deployment & Distribution (COP D2), 3) Coalition partners and CTF staff gain access to selected, operationally relevant information on US and coalition airlift and sealift (military & commercial) supporting coalition activities. CMS is a 4-year project sponsored by US Pacific Command. Key participants include the Quadrilateral Logistics Forum consisting of Australia, Canada, United Kingdom, and the United States. Initial capabilities will be demonstrated and operated in FY07, demonstrations and assessment on coalition networks in FY08 and FY09. USTRANSCOM is the Transition Manager and transition activities will begin in FY07, leading to firm transition to multiple coalition networks by 2010.

- FY 2007 Accomplishments - Refer to the ACTD R-2a

- FY 2008 Accomplishments - Operationally harden and enhance the Phase I prototype; operationally test the ability of CMS to provide coalition data to SMS or a suitable US feeder system; Operationally test the ability of CMS to export data for coalition partners (to include commercial partners); Integrate CMS into the Coalition Theater Logistics (CTL) portal; Conduct an appropriate Limited Operational Utility Assessment (LOUA) utilizing an agency not affiliated with product development; Complete an LOUA employing a coalition network in an operational or exercise setting.

- FY 2009 Planned Output - The following activities will occur: Finalize CONOPS documentation and complete DOTMLPF Change Recommendation; Transition is planned to multiple coalition networks; implement a cross domain solution and complete the accreditation and certification process. Conduct final OUA. Complete the JCTD remaining Program Management actions.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Multi-Sensor Aerospace-ground Joint ISR IC (MAJIIC)		3.100	

The JROC approved the capability need for MAJIIC as an FY04 new start. The outcome of MAJIIC is to develop, test and transition a set of standards, eXtensible Markup Language (XML) formats, and information services to promote intelligence, surveillance and reconnaissance (ISR) interoperability between U.S. and Coalition ground stations and systems. MAJIIC will demonstrate near-real-time interoperability of data from electro-optical, infrared, motion video, moving target indicators, synthetic aperture radar, and other sensors; enhance collaborative targeting operations; improve ISR data accessibility and sense making to support U.S. Joint ISR operations. Outputs and efficiencies include: 1) Near real-time MAJIIC ISR mission and sensor data is available for discovery and smart pull within the Collateral Space in near real time (i.e. Post in Parallel); 2) MAJIIC services and data are readily discoverable via portals, C2 Visualization and other applications, and other Global Information Grid (GIG) service providers; 3) MAJIIC data pedigree is trustable by users; 4) MAJIIC service access is assured for authorized users and denied for unauthorized users; 5) MAJIIC data access is provided based on user clearance, country affiliation, and role and protected from those not meeting the minimum policy requirements. Transition is planned for FY 2008 by the U.S. Army Training and Doctrine Command (TRADOC) System Manager to the Service Distributed Command Ground Station (DCGS) programs, to satisfy their requirements for coalition ISR interoperability and Network Centric Enterprise Services compatibility. Transition already Accomplished: The MAJIIC Full-Motion Video ISR Information Services (ISRIS) capability deployed as part of JIOC-I to OIF, and is transitioning to the Army Distributed Common Ground System (DCGS-A). NATO is deploying the MAJIIC coalition shared database (CSD) as part of the NATO Intelligence Management and Reporting Tool (IMART) to OEF. Remaining transition: NATO, Supreme Headquarters Allied PowerEurope (SHAPE), and the U.S. will adopt demonstrated capabilities and concepts of operation into existing national and coalition systems. MAJIIC technology and lessons learned will transition to the Service DCGS programs to satisfy their requirements

for Coalition ISR interoperability and Network Centric Enterprise Services compatibility. U.S. Joint Forces Command is the operational sponsor and the Air Force is lead service.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Participate in the annual MAJIIC coalition exercise with possible NATO Allied Command transformation with NATO Air Group IV ISR capability. Validate CONOPs and conduct MUA. Transition capability into the DCGS Integration Backbone spiral baseline. Complete the ACTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
MASINT Tactical Intelligence Fusion (MASTIF)		3.700	2.500

The Joint Requirements Oversight Council (JROC) validated the capability need for MASCOT, renamed MASTIF, as an FY06 new start. The outcome of MASTIF is to provide the warfighter with a set of Network Centric Intelligence, Surveillance and Reconnaissance (ISR) collection systems and management applications to employ traditional and non-traditional, distributed sensing against concealed/obscured targets, with the goal of enhancing detection, classification, characterization, and tracking of these targets. This five-year project is under the sponsorship of the United States Special Operations Command (USSOCOM) and United States Southern Command (USSOUTHCOM). The lead DOD agency is the Defense Intelligence Agency (DIA). The primary outputs and efficiencies to be demonstrated are: 1) exploit Measurement and Signatures Intelligence (MASINT) technologies and develop new sources and methods to counter adversary concealment and deception techniques, 2) develop new methodologies for sensor-to-sensor communications to enable tipping and cueing, and 3) seek new fusion processing systems to make maximum use of the data to solve the difficult problem of concealed/obscured targets.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Mature fusion capability. Complete Demo 1 with sensor integration in a laboratory environment. Conduct final demonstration on airborne test platform and complete JMUA. Plan for spiral capabilities to field during transition and identify opportunities for integration of other on or off board sensor information.
- FY 2009 Planned Output - Begin EUE. Spiral initial ACTD capability for COCOM field application. Support required documentation modification needs, and supply required documentation as appropriate for transition. Continue development of CONOPs and TTPs, based on user feedback. Support technology transition. In FY 2010 Complete EUE and ACTD. The ACTD will complete in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Computer Assisted Threat Exploitation Program (CATE)	1.125		

The Computer Assisted Threat Exploitation Program (CATE) will increase maritime domain awareness in a selected AOR by applying a maritime threat evaluation software program, fully compatible and interfaced with maritime detection data inputted from deployed equipment, tools, instrument, or other data sources, and authorized to operate in a military coalition network environment. The maritime threat evaluation program must enable the Navy to detect, identify and analyze the threat of vessels traveling within and through the observed area/sea lanes.

- FY 2007 Output: Funding will be used solely for the purposes of exploiting the capability of the CATE System for use with coalition partners. Working with staff of Commander, U.S. Naval Forces Europe, and staff of the North Atlantic Treaty Organization Component Commander Maritime, this funding will embed CATE capability into existing NATO CCMAR maritime awareness systems, and provide associated support for integrating the capability into ongoing NATO CCMAR operations.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Distributed Network Switching (DNS) Joint Capability Demonstration		1.600	

Congress appropriated funds to integrate a maturing high-speed (40+ GBps) optical switching capability combined with a networking appliance that enables to masking of network media access control addresses. The outcome of DNS is to develop and demonstrate a stealth core backbone network for interoperable IP-based, high-capacity data transfer through secure networking functionality more immune to cyber-attack. The capabilities proposed for development in this capability demonstration will improve network defenses while enabling high-speed data transfer

between authorized nodes. Navy will participate in developing and demonstrating the functionality. The primary outputs and efficiencies to be demonstrated are: 1) improved core networks capacity and redundancy, (2) improved cyber-attack immunity, and (3) users able to seamlessly use network services. DNS output is demonstrated stealth core functionality. The efficiency is that Warfighters will be able to interoperate in a over a new networking framework that provides increased immunity from cyber-attack. DNS may transition to Global Information Grid (GIG) core services.

- FY 2008 Planned Output - Initial stealth core prototype.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Hardware Encryption Tech Program		1.600	

Congress appropriated funds to mature hardware-based hard disk encryption technology to counter the recurring issue of lost computers and resultant compromise of sensitive but unclassified information (such as social security numbers, personal identifying data, or agency information.) The outcome of Hardware Encryption Tech Program is to develop and obtain certification of _data-at-rest_ protection. The capabilities proposed for development in this technology program will enable mobile computing users, data-at-rest defenses. Navy will participate in developing and demonstrating the functionality. The primary outputs and efficiencies to be demonstrated are improved mobile computing protection of data-at-rest. Hardware Encryption Tech Program output is certified data-at-rest protection for sensitive but unclassified data. The efficiency is that mobile users will have protection of their data in the event computer assets are lost or stolen. Hardware Encryption Tech Program will transition to a commercially available product line for use by any executive department agency requiring protection of data at rest.

- FY 2008 Planned Output - Productization of the FIPS 140-2 certified capability developed under previous related efforts.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Simultaneous Field Radiation Tech (SFRT)		3.100	

Congress appropriated funds to develop a new type of antenna for use on radio-frequency (RF) communications devices. The emergent research proposed use of cylindrical RF antenna forms to reduce antenna profile and length while improving antenna gain. The outcome of Simultaneous Field Radiation Tech (SFRT) is to develop and demonstrate improved antennas for tactical radios in the High Frequency, Very high Frequency and Ultra High Frequency radio bands. The capabilities proposed for development in this technology program will improve communications capabilities while reducing antenna visibility. Navy is participating in developing and demonstrating the new antenna functionality. The primary outputs and efficiencies to be demonstrated are improved tactical communications. SFRT output is certified antennas for at least two classes of tactical radios. The efficiency is that mobile users will have improved communications while enjoying more covert antenna profiles. Simultaneous Field Radiation Tech (SFRT) will transition to a commercially available product line for use by any executive department agency requiring tactical communications.

- FY 2008 Planned Output - Development, demonstration and initial productization of new antenna technology.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
SPARTAN Advanced Composite Technology		1.600	

The Joint Requirements Oversight Council (JROC) validated the capability need for SPARTAN as a FY02 start. The outcome is to provide a modular, multi-mission, unmanned surface vehicle (USV) used to deploy sensors and weapons as low-cost force multipliers with integrated expeditionary sensor and weapon systems for use against asymmetric threats. The expanded range provides a

layered defense, early warning/intercept capability for incoming threats, thereby improving protection of surface combatants, noncombatants, and other national and strategic assets. The user sponsor is U.S. Pacific Command whose Operational Manager is the U.S. Third Fleet, lead service is the U. S. Navy. The primary outputs to be demonstrated to the users and evaluated in the Military Utility Assessment (MUA) are 1) Conduct critical missions Antisubmarine Warfare (ASW); Mine Warfare (MIW); Intelligence, Surveillance, and Reconnaissance/Force Protection/precision Engagement (ISR/FP/PE); 2) Prepare the waterspace for Amphibious and Sealift Ops; and 3) Provide port-protection when launched/operated from shore. The efficiencies to be gained are 1) force multiplication using low-cost deployable sensors and weapons; 2) provide a symmetric response to asymmetric threats; 3) expanded range to provide for a reduced risk to personnel and capital assets during the conduct of dangerous missions. The Transition Strategy: The SPARTAN USV Command and Control system and Concept of Operation (CONOPS) will transition to the U.S. Navy Littoral Combat Ship (LCS) (PEO-LMW, PMW 420) Program of Record (POR) for the LCS USV. Transition is scheduled to begin with LCS Flight Zero, Ship number One production in January 2007.

- FY 2007 Output - The ACTD officially completed in FY 2006, however a $1.3M congressional add was provided in the ACTD PE in FY 2007 for composite technology research to support Navy transition efforts into the LCS program of record.
- FY 2008 Planned Output - Congressional funding was added to continue composite technology development for Spartan. The effort will encompass three phases in the evaluation and characterization of advanced composite materials for Spartan and future USV applications. Phase 1: USV Payload/Sensor Performance Improvement - payload/sensor improvement efforts will include an FEM analysis that will be conducted with known properties of structural components. Early and later full-scale testing will be conduct on prototype and full-scale payload/sensor hardware and the supporting platform interface foundations. Material Characterization will be conducted to evaluate performance of the materials. Static and dynamic material response will be characterized to validate the FEM analysis. Specimen fatigue and creep may also be studied, as well as temperature variation. Volume fraction optimization and material processing/fabrication techniques will also be investigated as necessary. A Final Design and FEM analysis will be conducted using new material properties. "Build-to" drawings will be developed after the design is finalized. At-sea testing will be conducted with packages installed on a SPARTAN USV (or next-generation SPARTAN platform) under operationally representative conditions. Test instrumentation will be used to record load conditions.
Phase 2: Electronic Sensors/Payload - following successful completion of Phase 1 in it intended to assess, design, fabricate and test additional mission/payload components (structural and non-structural) of more complex shapes and configurations used in SPARTAN including electronics and sensor enclosures. Also in this phase is the potential to explore the need to meet low-smoke requirements.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Louisiana Command and Control Interope Communications and Information		2.000	

An operational model for high speed reliable wireless communications in Louisiana that is standards-based and is accessible to the Department of Defense when required during military support operations. The venue was selected in part due to the convergence of elements of the national critical infrastructure and defense industrial base. By adhering to open networking standards the functional advantage of this high capacity digital network is to provide new and innovative ways to fuse sensor and C2 functions which advances the daily operations of the practitioners and has scalability in times of crisis regardless of origin, man-made or natural disaster. Operating with a hybrid 5.8 GHz and 4.9 GHz implementation, the project provides the advantage of using uncluttered public safety radio licenses for reliable communications and higher performance equipment to support non-public safety participants and backup communications pathways. Congressional funding was provided in 2006 to finish the build-out and testing of the network. FY 2008 Congressional funding will expand those Command and Control capabilities in Louisiana.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
CoCom Direct Support, Pre-Transition and Classified Programs		21.685	22.672

The JCTD Direct Program Support is comprised of four programs broken-out separately from the specific JCTDs projects. The direct funding line is used to provide support for the entire JCTD program (versus individual JCTDs). These four programs include (1) Unified Combatant Commander (CoComs); (2) JCTD Pre-Transition Support; (3) Interagency Classified Projects, and (4) Joint

enabling technologies that are either directed by congress or initiated by DUSD (AS&C).
1) Unified Combatant Commander (UCC) Direct Support: The CoCom's play an essential role in the selection, validation, demonstration, and transition of JCTDs. The focus of JCTDs is to directly fill joint CoCom/coalition capability gaps. Many JCTDs have funding allocated for the CoComs from within their specific program funding lines. Additionally, in previous years DUSD (AS&C) would attempt to provide direct ACTD support from OSD if resources became available. This direct support allows for a timely allocation of resources to the CoComs, based on the number of JCTD projects being sponsored and the intensity of effort required. The Department also envisions that the CoComs will play a greater role in the development, support and coordination of JCTDs that are coalition oriented (within their specific AOR). CoCom direct program funding is estimated at $5.0 million per year.
2) JCTD Pre-Transition Support: The JCTD program has been highly successful in rapidly developing and demonstrating new technologies and complementary concepts of operations for the warfighter. In order to successfully transition more JCTDs to the warfighter, the SECDEF established the goal of increasing the number of JCTDs evolving into formal acquisition programs. In order to enhance this transition effort and to respond to GAO recommendations in earlier years, the JCTD program continues to support a pre-transition line in the JCTD budget submission. Funding for pre-transition initiatives will be approximately $3.0 million per year.
3) Special Capabilities Office (SCO)/Interagency Classified Support for JCTDs: JCTDs also support a limited number of classified efforts which are coordinated with other agencies and detailed in separate DoD budget exhibits. Funding for this direct program support is estimated at $12.0 million each year.
4) Joint Enabling Technologies: Over the past several years, congressional committees have highlighted the potential of mature, joint technologies and provided resources to the JCTD program to investigate the military utility of these technologies. DUSD (AS&C) also becomes aware of promising technologies which may have transformational application to JCTDs. The need for these technologies may be realized until an JCTD is mid-way through its development or after a final demonstration. In most cases, these enabling technologies have broader application across several functional capabilities addressed by various JCTDs.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
FY 2008 Rolling Starts		19.152	24.080

In FY 2008 JCTD selection process five JCTDs were identified by the Department as potential rolling starts. These projects were selected because they represent important warfighter concerns and capabilities. Three of the proposals, address issues with emerging technologies that could be significant game changers. While these projects have been successfully vetted through the JCTD selection process, some additional proposal development must be addressed with the stakeholders (i.e., Services, Agencies, Coalition and Inter-agency partners), prior to project initiation. In FY 2008, five candidates emerged that were particularly compelling; however, due to technology or resource related issues, they are still in a developmental stage. These projects show such great potential capability that they were included as part of the official congressional notification requirement anticipating initiation as they become ready. This helps meet the new JCTD goal of being a more agile process to meet urgent warfighter needs faster. The five projects are: 1)Cross Domain Collaborative Information Environment (CD-CIE)- Provides whiteboard & chat with language translation for Coalition and Interagency Cross domain environments; 2) Medusa - Provide low cost Fire and Forget weapon for UAV or Helo applications; 3) NVW/ADAS - Provide SOF Aviation Next Generation full Spectrum Night Sensing & Missile Warning; 4) NET Zero Plus - Alternative energy production for deployed forces; 5)Transnational Information Sharing for Coalitions (TISC)- A C2 capability to Share Information among Partner Nation, Peace Keeping, Humanitarian Relief with Africa Missions. In FY 2007, four of the five rolling starts were initiated.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
FY 2009 JCTD New Starts			58.300

Funding for FY 2009 JCTD new starts that will result from the JCTD selection process that will begin in March 2008. New start selections will be finalized in August/September of 2008, just prior to the year of execution. These funds will start six to ten new starts in FY09. Although the specific projects are unknown at this time, the 2008 selection process provides a more rapid delivery of capabilities than the traditional, incremental programming and budgeting methods that are supported by the deliberative Planning, Programming, Budgeting and Execution (PPBE) process. The JCTD process is adaptive and provides an agile technology development and demonstration program to better address a quickly changing threat. The JCTD model is an agile process spanning of two to four years. The concept falls between the Joint Rapid Action Cell (JRAC) urgent needs process of less than two years with little or no development, and the traditional, more deliberate, formal acquisition process that can stretch five to ten years. Final selection of projects just prior to the fiscal year allows for the program to be as agile as possible.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Tactical Service Provider (TSP)	1.200	3.700	3.800

The Joint Requirements Oversight Council (JROC) validated the capability need for TSP as a FY07 new start. The TSP ACTD focuses on taking full advantage of emerging commercial technologies to significantly enhance and improve C2 and Net-Centric capabilities to meet critical present and near-term requirements until DoD's next generation communication systems (JTRS, TSAT, GBS, IP SATCOM) are at Full Operational Capability (FOC). TSP is planned for a final demonstration in the fourth quarter of FY08, with sustainment of the demonstrated capabilities by DISA through FY09 until transition to programs of record in FY10. TSP outcome will enable broadband communications between strategic information sources and tactical users as well as between tactical users. The expected output is wideband communications supporting two-way, high-bandwidth services for tactical users using a hybrid architecture of emerging, standards-based SATCOM and wireless technologies by delivering robust lightweight commercially available applications, DoD tactical applications, and emerging Net Centric Enterprise Services (NCES) applications through demonstration and testing in a simulated, mobile tactical environment. The expected efficiency is substantial increase in delivery of tactically relevant command and control and intelligence-related information products to land mobile troops, and the near real time delivery of tactically generated information to operational and strategic echelons. TSP is a two year ACTD co-sponsored by USCENTCOM and USJFCOM. The Defense Information Systems Agency (DISA) is the lead agency.

- FY 2007 Output: The technical focus for TSP was on implementing emerging digital broadcast protocol standards for forward SATCOM link, using emerging Joint Internet Protocol (IP) Modem standard and a new satellite protocol standard for return SATCOM link, achieving two-way Bandwidth on Demand, and the addition of a Global Broadcast Service (GBS) terminal appliqué using IEEE standard 802.16 for two-way wireless communications extension. TSP expected efficiencies include a 38% improved bandwidth efficiency over existing digital broadcast standard in use today, decreased size and weight of equipment required by mobile tactical sources to send and receive relevant information, and measurable real- or near-real-time transmission of intelligence collection products from deployed forces back to operational and strategic users. Two demonstrations are planned for the fourth quarter of FY07: the first two-way IP SATCOM communications over the improved GBS terminal prototype; the second a "WiMax" (802.16) wireless extension of communications connectivity from the improved GBS terminal. From an operational viewpoint, these demonstrations will establish the new baseline for bi-directional high bandwidth satellite communications, and provide early limited military utility assessment of the technologies. Programmatically, the operational and technical teams will be obtaining approval of the Implementation Directive and developing the Concept of Operations (CONOPS) and the integrated assessment plan.
- FY 2008 Planned Output: There are two additional demonstrations are planned for FY08: the first showing the use of "lightweight" commercial applications of tactical utility over the SATCOM-wireless extension; the second and final demonstration will show Defense Information System Network (DISN) tactical Net Centric Enterprise Services (NCES) over the SATCOM-wireless extension. Operationally, TSP will ratify the planned migration to services architecture in tactical implementation by providing wirelessly extended broadband communications to the mobile, dismounted Warfighter. The efficiencies expected include enhanced situational awareness, real- or near-real-time intelligence sharing, a more agile and effective combat force with collaborative capabilities at the "tactical edge" to and from mobile troops.
- FY 2009 Planned Output: DISA will sustain the demonstrated and militarily useful capabilities while finalizing the documentation and transition of functionality to programs of record. The ACTD will complete in FY2009.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Large Data	1.745	9.100	9.000

The Joint Requirements Oversight Council (JROC) validated the capability need for the Large Data (LD) Joint Capability Technology Demonstration (JCTD) as an FY06 new start. The outcome of Large Data is to demonstrate the military utility of a highly scalable, rapid, and secure integrated capability to retrieve, store and share massive amounts of information effectively between global users. It will provide increased situational awareness by displaying large, fused sets of geospatially-referenced data in a Joint Warfighting context using intuitive navigation techniques. Large Data is a three-year project under the sponsorship of the United States Strategic Command. The primary outputs and efficiencies to be demonstrated in the JCTD Military Utility Assessment are: 1) Synchronized databases across all major operational storage nodes, i.e. cache coherency; 2) Timely delivery and sharing of data - instant real time access and collaboration; 3) Intuitive way for users to navigate large data sets (petabytes to exabytes); 4) Ability to easily visualize huge amounts of data that is being generated; 5) Capability to perform "trackback" or change analysis on an unprecedented scale.
The user sponsor is the U. S. Strategic Command and the lead agencies are the National Geospatial Agency (NGA) and Defense Systems Agency (DISA). Transition is planned for FY 09 after

successful JMUA to National Geospatial Agency (NGA) and Defense Systems Agency (DISA). Both agencies are participating in the JCTD as Co-Transition Managers. The Large Data JCTD is scheduled to complete in December 2008.
- FY 2007 Output - Spiral 2: Develop holistic target characterization prototypes and deploy to USFK mini node. Add 4th CONUS node. Install Trans-PAC link. Develop capability for geo-temporally indexed multi-agency data, with security, identity management, and Continuity of Operations features. Perform multi-node testing on classified and unclassified networks. Provide large geospatial visualization displays and advanced data integration. Refine CONOPs and TTPs. Plan JMUA. Conduct demonstration in USFK and JEFX.
- FY 2008 Planned Output - Spiral 3: Provide capability to the edge -- from COCOMs to low bandwidth users. Refine software with advanced geospatial and temporal search capabilities. Add a Zoomable User interface. Apply for JWICS accreditation. Add metadata tagging enhancements. Provide large data capacity to xESSA, JCRE ACTD and other net-centric capabilities. Conduct JMUA.
- FY 2009 Planned Output - JMUA reporting and Extended Use in preparation for integration and transition into program of record. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Precision Air Drop System (JPADS)		1.200	

The Joint Requirements Oversight Council (JROC) validated the capability need for JPADS as an FY04 new start. The outcome of JPADS is to demonstrate a fast, flexible, direct projection-based distribution system to sustain rapidly deployed forces at any global destination - strategically, operationally, and tactically. The primary output and efficiencies are to demonstrate a high-altitude (25,000 ft. Mean Sea Level (MSL)) autonomous offset airdrop capability (goal 8-25 miles offset) with the option to deliver separate and distinct payloads (up to 10,000 lb total, full rigged weight, minimum of 8.5Klbs of usable payload) to multiple locations from one release point to within a 250 meter (threshold) Circular Error Probable (CEP) (50 meter CEP objective). This effort focuses Army and Air Force programs and initiatives on meeting joint airdrop requirements. JPADS will provide a seamless and flexible system of systems approach, providing materiel resupply capabilities to meet dynamic in theater operational requirements and the strategic requirement of the CoComs worldwide no later than 24 hours from the request. JPADS is a four-year project with completion of the Advanced Concept Technology Demonstration (ACTD) development and demonstration by end of FY 2008 transitioning to United States Army (USA) Program Manager Force Sustainment Systems (PM FSS), U.S. Air Force (USAF) Mobility Systems Wing systems (Mission Planner (MP) hardware) and the USAF Electronic Systems Command (MP Software) by FY 2008. Transition accomplished to date: USAF Mission planner to both Afghanistan and Iraq, ongoing integration of MP into the Marine Corps C130J and into USSOCOM/USMC navigational aid for Military Free Fall (MFF) systems.

Planned Transition: Transition high-altitude, aircraft deployable, autonomous, airdrop systems, and in-flight mission planning with wireless communication to guidance, navigation, and control systems to USA PM-FSS and USAF PMs. Plan for and execute a potential rapid combat fielding of the residual 10K JPADS decelerator systems to Afghanistan and/or Iraq.

- FY 2007 Output - Refer to the ACTD R2a.

- FY 2008 Planned Output. Transition residual systems to USA or USAF units in CONUS and deliver to those services in the AOR requesting the residual systems by an approved ONS/MNS. Continue to execute interim transition with users in conjunction with PORs to include training and numerous weeks of airdrops with remaining systems available. Execute the first of three planned extended user evaluation (EUE) during DoD and NATO sponsored Precision Airdrop Technology Conference and Demonstration (PATCAD) 22-26 Oct 07. JPADS scheduled completion date is September 2008.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Chemical Unmanned Ground Reconnaissance (CUGR)		1.700	

The Joint Requirements Oversight Council (JROC) validated the capability need for CUGR as an FY05 new start. The outcome of CUGR is to provide manned nuclear, biological and chemical

(NBC) reconnaissance units with two new technology applications to be demonstrated in the Joint Service Light NBC Reconnaissance System's (JSLNBCRS) High Mobility Multipurpose Wheeled Vehicle (HMMWV) variant providing an unmanned capability. The first of these new systems (Thrust One) will replace the Double Wheel Sampling System (DWSS), currently in use, with a mobile Mass Spectrometer, using RAMAN technology. Since the DWSS can only be used when the vehicle is moving at a fast walk, replacing it with the RAMAN detector, which is producing reliable results at maximum vehicle speed, greatly increases mobility and flexibility for these units. The second technology (Thrust Two) is the incorporation of a small, remote controlled, sensor-equipped robot to be the recon crew's "point man" in high risk contamination reconnaissance. The efficiency of CUGR will be to utilize a machine rather than put a soldier at risk. CUGR addresses the capability gaps identified in the CBRN Baseline Capability Assessment, the JRO-CBRN Defense Mobilization Plan, and the supporting JCIDS Functional Area Analysis. Thrust One will transition as part of the Reconnaissance and Platform integration sensor block upgrade program and replace DWSS on Stryker, HMMWV and LAV vehicles. Thrust Two will become part of the Joint CBRN Dismountable Reconnaissance System (JCDRS). DTRA provides overarching program management. The Technical Manager is the U.S. Army Research, Development and Engineering Command's Edgewood Chemical and Biological Center. The Joint Program Executive Office for CBD assigned the Joint Product Manager for NBC Reconnaissance as the Transition Manager. The U.S. Pacific Command is the ACTD sponsor with Operational Manager responsibility with the U.S. Army Pacific who is providing the 95th Chemical Company as the ACTD demonstration unit. ACTD will complete in FY 07. Outputs will be: to increase maneuver speed to 45 kph vice 11-22 kph: allow detection/identification of various classes of substances simultaneously vice one at a time; reduce mission consumables; enable reconnaissance into areas that otherwise would be inaccessible by manned vehicles; can be deployed into hazardous environments; offer a point detection capability; and provide the ability to collect liquid, solid and aerosol samples.
- FY 2007 Output - Refer to the ACTD R2a.
- FY 2008 Planned Output - Provide two JCSD equipped CBRN Reconnaissance platforms and 2 CUGR's for residual phase support to the 95th Chemical Company (CMLCO) and initiate Extended User Evaluation. Complete mounted CUGV system design and integration on the third JSLNBCRS. Conduct mounted CUGV early user assessment. Complete CUGV test methodology development as well as the technical manual and user training plan. Conduct mounted CUGV technical and operational demonstrations. Receive integrated system and complete the ACTD. Develop documentation and planning for Thrust One installation and transition to Stryker vehicle (new request from U.S. Army). The ACTD will complete in FY2008.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Airborne Weapons Surveillance System (AWSS)	2.800	0.800	3.100

The Joint Requirements Oversight Council (JROC) validated the capability need for AWSS as an FY07 new start. The output of AWSS will be to demonstrate a capability to immediately detect enemy artillery, rocket, and mortar fires, and relay locations of enemy firing units to coalition counter-fire systems. The JCTD will use advanced staring non-imaging infra-red wide field-of-view detectors, together with electro-optic video, aboard unmanned air vehicles. The efficiencies of the AWSS system will be to detect artillery fires at ranges of 20 km or greater, locate the artillery within 100m, classify artillery type (152mm, 170mm, 240mm), and immediately transmit location and classification data. The capability will be demonstrated and assessed in forward areas using a Republic of Korea (ROK) unmanned air vehicle, and technical tests will be conducted in Continental U.S. using U.S. Army manned and unmanned air vehicles.

FY 2007 and 2008 Output: Concept operations, demonstration program definition, integration program coordination, component build.test, and system integration.
FY 2009 Planned Output: Operational testing and demonstration. The final demonstration and project completion will be in FY 2009.

Transition Strategy: U.S. Army intends to transition AWSS capabilities for U.S. Army unmanned air vehicle applications, pending successful military utility assessment. ROK will assess development of ROK version of AWSS, based on results and lessons of AWSS demonstrations in Korea.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Surface Warfare (JSuW)	1.300	5.000	5.000

The Joint Requirements Oversight Council (JROC) validated the capability need for JSuW as an FY07 new start. The output of the JSuW JCTD will be to allow multiple existing Intelligence,

Surveillance, and Reconnaissance (ISR) assets, launch platforms, and standoff weapons to communicate via maturing weapons data link network technologies. The efficiency will be that Joint ISR platforms may provide initial targeting data and in-flight targeting updates to standoff weapons while the launch platform either remains beyond or decreases time inside the threat envelope. As a result of this interaction via the weapons data link network, the Combatant Commander will be provided multiple options for joint kill chains to increase operational agility, and have significantly extended space in which surface targets may be successfully prosecuted.

FY 2007 and 2008 Output: Deliverables will include documented Concept(s) of Operation (CONOPS), Tactics, Techniques, and Procedures (TTP), and software changes to operational flight programs aboard demonstration ISR platforms. The final demonstration will be in FY 2009 and JCTD Completion will be in FY 2010.

Transition Strategy: Following the demonstration, validated software will be readily available to incorporate into additional assets via each individual acquisition program's mode of software push. CONOPS and TTP will be disseminated to the Services through their respective training commands to capitalize on enhanced capabilities. All platforms and weapons involved are currently Programs of Record, and no substantive hardware changes will be made to these assets in the course of the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Global Observer (GO)	7.391	7.348	10.000

The Joint Requirements Oversight Council (JROC) validated the capability need for Global Observer as an FY07 new start. The Global Observer JCTD is a transformational technology program that proposes to demonstrate a liquid hydrogen powered unmanned aerial vehicle, using a modified, off-the-shelf internal combustion engine, capable of flying extremely long endurance (objective of 7 days on station) with a moderately sized payload capacity (380 lbs) at an altitude of 55-65,000 ft. mean sea level. The output of Global Observer will be to provide low-cost persistent surveillance (ISR). The efficiencies of Global Observe will be a long endurance capability that would support placing system into theater from garrisoned locations, reducing the number of forward bases required for world-wide operations and relieving the optempo from other overstressed assets.

FY 2007 and 2008 Output: The design, development, fabrication, integration, and testing of 1 GO UAS, to include 1 air vehicle and 1 launch and recovery element (LRE). The final demonstration and JCTD completion will be in FY 2010.

Transition Strategy: The residual package will be transitioned to Air Force Special Operations Command for extended use starting in FY 2011 to support its core mission of intelligence, surveillance, and reconnaissance with the persistent operations using the Electro-Optics/Infrared and communications relay payloads. Pending Joint Requirements Oversight Council validation of the capability requirement, the Air Force Air Combat Command will program funding in the FY 2012 POM to transition Global Observer to the Combined Air Force.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Zephyr		6.100	

The Joint Requirements Oversight Council (JROC) validated the capability need for Zephyr as an FY07 new start. The Zephyr JCTD is a transformational technology program that proposes to demonstrate and transition into service a solar-powered unmanned aerial vehicle to meet urgent operational requirements for USCENTCOM and USEUCOM. The output of Zephyr will be to provide low-cost persistent surveillance and communications relay, flying continuous operations for periods of months at a time using solar power plus batteries for continual day/night operations. The efficiencies of Zephyr's sensors will provide ground radio communications links over hundreds of square miles and surveillance of logistics routes and ground threats. Zephyr is hand launched and requires no formal infrastructure and little manpower to operate. Zephyr solution provides cross-theatre benefits to all U.S. Forces.

FY 2007 and 2008 Output: The development of the JCTD Integrated Assessment Plan (IAP) to include: (1) providing day to day operational management through close coordination with the JCTD

Technical and Transition Managers; (2) development and validate Concept of Operations (CONOPS); Concept of Employment (COE); Tactics, Techniques, and Procedures (TTPs), and associate Training Support Packets (TSPs) as needed; (3) management of the assessment activities in support of a military utility decision. Funding also includes support provided by the Operational Test Agency (OTA) to conduct assessments, the Assessment Execution Document (AED). The final demonstration is FY 2008. JCTD Completion: FY 2008

Transition Strategy: Aggressive transition to production is demanded by a USCENTCOM urgent operational requirement in theatre. The Zephyr team is working with QinetiQ North America to transition Zephyr to a U.S. production partner.
Suppliers: U.S. and U.K. managers will implement post-JCTD acquisition strategies for all procurements (notably two cutting-edge U.S. technologies/solar array and battery). Residuals: 2 x Zephyr high-altitude, long-endurance unmanned aircraft systems complete with payloads and ground stations. Training package will include deployment procedures and techniques, user maintenance manuals, and concept of operations/tactics.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Communications Air-Borne Layer Expansion (Cable)		4.500	4.500

The Joint Requirements Oversight Council (JROC) validated the need for CABLE capabilities as a FY08 new start. The outcome of CABLE is to develop and demonstrate: an airborne backbone network for interoperable IP-based, high-capacity data transfer through secure gateways between Services_ networks. The capabilities proposed for development in this ACTD will improve _tactical edge_ networks capacity and redundancy, provide bandwidth for mobile or stationary wireless users, and enable users at the tactical edge to connect with one another. CABLE JTD is a three-year project under sponsorship of U.S. Strategic Command, with completion of development and demonstration by end of FY2010; and transition to U.S. networking systems as early as FY2011. The lead services are Navy and Air Force. The primary outputs and efficiencies to be demonstrated in the ACTD Military Utility Assessment (MUA) are: 1) improved "tactical edge" networks capacity and redundancy, (2) increased bandwidth support to mobile or stationary radio-frequency connected users, services and applications, and (3) users at the tactical edge able to connect seamlessly to network services. CABLE output is interoperability of emergent Service networking architectures with users at the tactical edge from one Service able to take advantage of other-Service provided ground entry points. The efficiency is that Warfighters will be able to interoperate in a complex or austere operational environment, using emergent joint data standards. Combatant Commanders will be able to extend modern mission applications for collaboration and situational awareness to airborne Warfighters, leading to improved situational awareness and shorter operational timelines. The efficiency is that the Warfighter will possess flexibility and a broader range of options with a greater assurance of success. CABLE is targeted for transition to the Air Force Battlefield Airborne Communications Node (BACN), Navy Automated Digital Network System (ADNS), Army Warfighter Information Network-Tactical (WIN-T) Aerial Layer, the Multi-Role Tactical-Common Data Link (MR-TCDL) standard, and common Tier 3 Enterprise Services. Transition Managers: USAF Objective Gateway and USN Automated Digital Networking System.

- FY 2008 and 2009 Planned Output - Interim initial gateway prototype connecting data links and voice systems.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Multi-Function Threat Detector (MFTD)		2.500	2.500

The Joint Requirements Oversight Council (JROC) validated the need for MFTD capabilities as a FY08 new start. The output of MFTD will be to provide indication, warning, or situational awareness to the pilot or aircrew of non-guided threats such as small arms fire, tracer fire, anti-aircraft artillery fire, and rockets/rocket propelled grenades (RPGs). The efficiencies of MFTD will be to reduce significant and unacceptable vulnerabilities to highly proliferated battlefield threats to include MANPADs, RPGs and Unguided Rockets (UR). MFTD JCTD expands aircraft MWS to include Hostile Fire Warning (HFW) from MANPADS, RPGS, URs and incoming Surface-to-Air Fire from small arms to Anti-Aircraft Artillery. MFTD will develop software algorithms to detect, characterize, and display unguided threats to the aircrew. MFTD plans to develop an infrared micro-lens optics package that provides simultaneous spatial and temporal co-registration of spectral images. The HFW algorithm will not degrade the current operational performance of the Missile Warning (MW) or LW Sensors.

FY 2008 Output: Will conduct the MFTD module demonstration: MFTD module mounted on tripod and tested against HFI threats. Test data acquired and analyzed.
FY 2009 Planned output: MFTD will be integrated into AAR-47 sensor head as HFI detector demo with the planned demonstration venue at China Lake. It will test the HFI system installed in a remotely controlled helicopter in self-powered hover under realistic flight loads and against actual threats at and around the helicopter in-hover to assess accurate HFI. Record measured data to determine project operational utility, provide for system integration, and expedite flight qualification. The MUA plan currently being drafted in coordination with COMOPTEVFOR. The final demonstration will be in FY 2009. JCTD Completion: FY 2010

Acquisition/Transition Strategy: MFTD JCTD will transition into both Navy and Army Programs of Record. First, the MFTD module will be integrated into the AAR-47B(V)2 sensor, and fielded to those aircraft that currently are outfitted with the AAR-47. Also, it will be transitioned into the Joint and Allied Threat Awareness System (JATAS) program. JATAS will be the Army's primary MW, LW, HFW system for cuing counter measures dispensing systems as well as Directed Infrared Countermeasures systems. Army's funding will integrate the MFTD module into the AAR-57 MWS.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
CORPORAL		5.000	5.000

The Joint Requirements Oversight Council (JROC) validated the need for CORPORAL capabilities as a FY08 new start. The output of CORPORAL will be to provide ground-based, deployed Marines and Soldiers with the capability to take full advantage of tactically relevant sensor data, Command & Control (C2), and Electronic Attack (EA) in near real time.
Specifically, Non-Traditional ISR (NTISR) "on-demand" to the ground unit; beyond Line of Sight connectivity maximizing opportunity for collaboration or synchronization; distributed operations demand faster responses and necessitate providing greater capability to existing aircraft rather than introducing new aircraft; greater joint service capacity from existing and planned EA assets and platforms. The efficiencies of the CORPORAL JCTD will be to decentralize the data to share openly across systems allowing airborne and ground-based tactical systems to be connected. The result is a greatly improved/expanded communications range and availability so that critical data/information can be shared with other warfighters allowing collaboration and visibility to higher authorities. This will provide the ground forces with a beyond-line-of-sight (BLOS) connectivity to ISR resources (traditional and non-traditional) that they do not have today. This JCTD will provide a collaborative distributed data and information exchange framework based on existing and planned warfighters' communication waveforms.

FY 2008 Output: Litning pod hardware and network pods. Payload integration and field testing.
FY 2009 Planned Output: Operational Assessment, Concepts of Operations and Joint Military Utility Assessment. The JMUA will be in FY 2009. JCTD Completion: FY 2010.

Acquisition/Transition Strategy: Will transition to USN NAVAIR -234 and PMA 272 (USMC Aircraft); Program of Record (POR): Lightning Pod, Shadow 200, Tier II UAS, MV-22 and USMC Aircraft (PMA-272).

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Shadow Harvest		5.000	5.000

The Joint Requirements Oversight Council (JROC) validated the capability need for SHADOW HARVEST as an FY08 new start. The outcome of the SHADOW HARVEST JCTD is to provide Combatant Commands an integrated, joint airborne capability to provide persistent surveillance to consistently, accurately and efficiently find, fix, track and target enemy assets obscured by weather, vegetation, camouflage, concealment and/or deception (CC&D). The program leverages the Defense Intelligence Agency's (DIA) SHADOW HARVEST C-130-based program along with several maturing sensors and relevant networking/data fusion/recognition technologies. SHADOW HARVEST will provide a timely and low cost C-130-based approach to integrate, operationally deploy, and demonstrate new sensor processing, exploitation, and dissemination (PED) capabilities into the intelligence production cycle and will require fewer personnel, reduce or eliminate dependence on specialized collection platforms, mitigate the problems associated with equipment standardization and minimize the impact on the maintenance infrastructure. The goal of this JCTD is to transition a

mature system, architectures, flexible adaptive CONOPS and platform which will allow for flexible airborne remote sensing in a tactical or irregular warfare environment. SHADOW HARVEST will be compatible with intelligence community, DoD and COCOM requirements and will provide a rapid to-the-field development capability for future sensor systems.

SHADOW HARVEST is a two-year project sponsored by USSOUTHCOM, and the JCTD is scheduled to be complete by the end of FY 2009. It will transition to selected Program Manager(s) / Program of Record(s) by FY 2012. The lead service is the US Air Force. The DIA is the lead agency responsible for organizing a multi-agency, multi-service team for the JCTD. The primary outputs and efficiencies of the JCTD Joint Military Utility Assessments are: (1) Conduct multiple airborne mission demonstrations against challenging CC&D/OTs using a tailorable C-130 multi-sensor system complete with on-board multi-phenomenology data fusion and ground PED, (2) Demonstrate and assess sensor cross-cueing/collaboration techniques for both baseline/new electro-optical/radar sensors and maturing MASINT sensors (to include low frequency/Multi-Band Synthetic Aperture Radar (MB-SAR), and hyperspectral imaging (i.e., Spectral Infrared Remote Imaging Transition Testbed (SPIRITT)), (3) Demonstrate dynamic in-flight mission tasking against emerging/evolving target sets, (4) Publish an OUA of the capabilities demonstrated and develop joint CONOPS and TTPs for COCOM target sets that will help the MAJCOM to develop sensor-mix strategies for COMCOM Target sets/missions and develop theater specific CONOPS to enable new collection capabilities to be integrated into the COCOM intelligence production cycle, (5)Maintain operation readiness, in flight status, for Extended Use of Residuals (EUR) assets to include a DIA SHADOW HARVEST system available for USAF and DIA tasking until transition to POR.

- 1Q FY 2008 Accomplishments _ Successfully completed second test flight series in December 2007. Conducted flight support to US NORTHCOM by conducting flights over burned areas from October 2007 California wildfires. Conducted demonstration of concept of support to USNORTHCOM_s Operation CLEAR VIEW requirements and DoD Support to Civilian Authorities (DSCA).

- FY 2008/2009 Planned Activities - Coordinate Implementation Directive and Management Plan (to include initial transition plan) and begin final system integration activities. Coordinate and plan demonstration activities to USSOUTHCOM AOR. Complete the JCTD in FY2010.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Web-enabled Training & Rehearsal System (JWTRS)		2.689	3.000

The Joint Requirements Oversight Council (JROC) validated the need for JWTRS capabilities as a FY08 new start. The output of JWTRS will be to provide capability to conduct rapid mission planning, rehearsal and training in a virtual, geo-specific, 3D "Real World" environment to prepare the warfighter to operate effectively in a complex, joint, combined and inter-agency combat environment. JWTRS efficiencies include: Language & Cultural Training for training the warfighter; Ability to deploy in unfamiliar regions/areas, with a better language and cultural understanding; Core Enterprise System - The ability to build a flexible and scalable core with ability to add interoperable modules will dramatically reduce cost future development costs; Rapid Mission Rehearsal software that will ingest various national intelligence terrain data sets to allow for the rapid creation of accurate geo-specific locations (These data sets include LIDAR, photographs, satellite imagery, DTED etc); Tools that allow operators to create their own mission rehearsal and training scenarios; Language & Culture Training - Cultural/Religious exposure with user defined scenarios, varying levels of difficulty and specific cultural objectives. Obtain and maintain proficiency in language skills and knowledge in real countries and cities; and Advanced Training Capability - A federation of systems that can be used in any combination on demand, at home, en-route, or deployed, to support Special Operations Forces.

FY 2008 Output: Begin Implementation Directive, Management Plan, Transition Plan and CONOPS development. Spiral 1 Limited Utility Assessment (LUA) - Demonstrate RealWorld gaming engine with limited operator stations.
FY 2009 Planned Output: Spiral 2 LUA Demonstrate gaming engine with SOF CDB, multiple operator stations and Govt CGF. In FY 2010 final demonstration of full capability of mission rehearsal generation from mission planning tools. Final MUA & Transition. JCTD Completion: FY 2010.

Transition: Spiral transitions are planned. FY08: SEAL Deliver Vehicle and Predator Desktop Trainer (DTT); FY09: Spiral 1 RealWorld Platform, C-130, MH-60 Blackhawk, Signals Intelligence DTT, Language & Culture Trainer; FY10: Deception and Littlebird DTT, Spiral 2 RealWorld Platform/Tools.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Joint Force Protection Advanced Security System (JFPASS)		4.000	4.000

The Joint Requirements Oversight Council validated the capability need for JFPASS as an FY08 new start. JFPASS addresses the validated problem that current force protection technologies and concepts of operation do not provide a comprehensive, effective, and sustainable Joint force protection capability. Fielded systems do not provide comprehensive situation awareness, absorb too much manpower, and are too costly with many variants and redundancies. The outcome of JFPASS is to demonstrate and transition an integrated joint force protection Command and Control architecture, providing rapid situation awareness where needed, decision support, and more effective force protection with reduced workload through systems integration. The primary outputs and efficiencies to be demonstrated in the JCTD are: 1) numbers of currently distinct force protection systems that are integrated for common situation awareness; 2) decreased time required to provide situation awareness to all in chain of command with force protection response missions; 3) decrease in operations center manning and workload required to maintain force protection situation awareness and manage situation responses. JFPASS is a 3-year project sponsored by US European Command. The project will conduct an initial demonstration and limited assessment after one year, to be followed by in-theater installations and operational utility assessment in the second year. Army, Navy, and Air Force force protection experts are participating and contributing funding and expertise to the demonstration of this Joint force protection capability. The US Navy is providing the Technical Manager, US Air Force provides the deputy Technical Manager, and US Army provides the Transition Manager. This project is aligned with the Joint Staff Installation Unit Base Integrated Protection Capabilities Based Assessment process.

- FY 2008 Planned Output - Conduct experiments to assess situation awareness and systems integration concepts for access control, vehicle inspection, intrusion detection, unmanned sensor, waterside security, and CBRN systems. Integrate selected technologies and conduct CONUS-based limited assessment.

- FY 2009 Planned Output - Refine situation awareness and systems integration architecture. Install integrated capability at high priority EUCOM-selected base. Conduct technical demonstrations and operational demonstration for operational utility assessment. Complete the JCTD in FY2010.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Hard Target Void Sensing (HTVS) Fuse		5.000	5.000

The Joint Requirements Oversight Council (JROC) validated the capability need for HTVS as a FY08 new start. The HTVS Fuze JCTD incorporates two significant features: (1) Capability to count voids and detonate at the optimal point, (2) Capability to survive and function in today's harder target environments. The HTVS business model provides a fuze approach that is applicable to the BLU-109, BLU-113, and BLU-122 legacy warheads. The JCTD will provide warfighting commands a proven capability with a number of residual mission ready fuzes in 31 months. The acquisition strategy allows a smooth transition from the JCTD to Systems Development and Demonstration (SDD) in FY10 followed by production. The U.S. Navy also has a requirement for this capability and has agreed to fund part of the JCTD in FY09. To date, the HTVS Fuze JCTD has accomplished the following: Management transferred from AAC/XRS to 708 ARSG; Sufficiency review for FY09 APOM initiative to fund JCTD complete; Sufficiency review for FY10 POM for SDD, Production and Sustainment completed; Acquisition Strategy for entire HTVSF Program Approved.

FY 2008/2009 Planned Output: The focus of the government team will be on completing the source selection in late February 2008 and awarding two contracts in March (08) for a 27 month rolling down-select to one contractor for SDD and Production. The formation of HTVSF team to include roles and responsibilities of all stakeholders will be paramount as will completing the required documentation for the JCTD. The focus will initially be on Modeling and Simulations (M&S) in the appropriate target environments for the BLU-109 and BLU-113 warheads. The contractors will be refining void sensing modules to ensure effective operation. Initial sub-scale testing and possibly sled testing will be conducted in an effort to refine M&S models. Additional tests will include ground testing, cannon tests; and flight tests.

- FY 2010 Planned Output: As the down-select to one contractor approaches the contractors will be required to meet the governments' exit criteria for the HTVSF JCTD. The fuze must (1) Survive and function during a fuze demo while penetrating 10K+PSI targets, (2) Demonstrate successful capability for detecting and counting more than one void during target penetration (3) Demonstrate time-delay capabilities, (4) Demonstrate cockpit programmability (5) Demonstrate trend toward affordability goal. In the 3rd qtr. 2010 will award a 33 month SDD and production contract for 5000 units. Complete the JCTD.

Accomplishments/Planned Program Title:	FY 2007	FY 2008	FY 2009
Combat Autonomous Mobility System (CAMS)		4.610	4.485

The Joint Requirements Oversight Council (JROC) validated the capability need for CAMS as a FY08 new start. Special Operations Forces (SOF) are operating for extended periods in wide ranging, austere, non-permissive areas against larger forces; all with resource constrained manpower. The CAMS JCTD output will provide robust organic capability to conduct: Timely Intelligence, Surveillance, and Reconnaissance (ISR); Command and Control of multiple assets over extended distances; Automated mobility in support of SOF mission profiles. In short, CAMS will provide the technology to force multiply the available manpower.

The CAMS JCTD efficiencies will integrate ground-based autonomous technology to leverage current SOF manpower. The system will employ mature sub-components to extend ISR range and targeting coverage, improve Joint fires support, C2 multiple unmanned ground and air systems, and provide automated support for multiple SOF mission profiles.

FY 2008 Planned Output: Develop the Implementation Directive, Management Plan, CONOPs, Transition Initiation, Build & Deliver Platforms, IAP, TLOE #1, Demonstration #1.
FY 2009 Planned Output: TLOE #2, Demonstration #2 - Military Utility Assessment - final demonstration: 4th Qtr FY 2009. JCTD Completion: FY 2010.

Transition Strategy: CAMS technology will transition to Program Executive Office - SOF Warrior. Robotic Systems _ Joint Program Office is postured to manage the USSOCOM Program of Record.

C. Other Program Funding Summary	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
ACTD PE 0603750D8Z (RDT&E/DW BA-3/Line #44)	158.313	1.589					
JCTD Transition PE 0604648D8Z (RDT&E/DW BA-4/Line #83)	3.029	2.934	14.962	18.911	18.886	19.917	19.959

Comment: In FY08 all ACTD funding transferred to the JCTD program. This action completes the transition to the JCTD model that began in the FY06 President's Budget. The new JCTD Program provides a "cradle to grave" path for transformational joint capabilities. The initial funding lines (program elements (PE)) are outlined in the table below. The PEs in the table (with the exception of the ACTD BA3 PE which will fully transfer to the JCTD BA3 PE in FY08) represent the JCTD model. The model contains a BA3 development arm as well as BA4 transition arm. Under the new JCTD process, the pace of development will be accelerated to two to three years. Only the ACTD/JCTDs that demonstrate the highest military utility will be considered for the transition funding in the JCTD BA4 Transition PE. Not all JCTDs require transition funding, many projects have a very clear transition path, however, some projects that demonstrate significant military utility require transition funds to "bridge" them to a program of record. Promising ACTDs may receive transition funding during the transition period to the JCTD program. Beginning in FY07 all new starts will be JCTD only. Refer to the specific Budget Exhibit for more details on each funding line.

D. Acquisition Strategy The strategy for ACTDs and now JCTDs has always been to focus on developing a transition path into a program of record or to establish a new program for those projects that show significant military utility in the demonstration phase. The following questions are used for the selection of compelling JCTD capability projects:
- Does the action address COCOMs needs?
- Is a Joint capability or military advantage gained?
- Do we have a clearly stated and attainable goal?
- Have risks and costs been fully and frankly analyzed?
- Have all other DOTMLPF means been fully explored?
- Is there an exit strategy to avoid endless development?
- Have consequences of inaction been fully considered?
- Can genuine support be garnered from interested partners?
- Are experienced people available to execute the effort?
- Can results be demonstrated to the project champion?

Under the new JCTD program, only the ACTD/JCTDs that demonstrate the highest military utility will be considered for the transition funding in the JCTD BA4 Transition PE. Many JCTDs will transition smoothly into a well identified program of record and not require funding from the transition PE (the transition arm of the JCTD model). Promising ongoing ACTDs may also receive transition funding from the JCTD Transition arm as the ACTD program completes. All ACTD funding will transfer to the JCTD program element in FY08. Beginning in FY07 all new starts will be JCTD only. Some initiatives that are successful but are having smaller problems transitioning to an identified program of record may receive "pre-transition" funding from the JCTD BA3 PE. JCTD metrics and guidelines are:
- Capability Based: Greater CoCom influence looking at nearer term joint/coalition needs
- Provide Spiral Technologies - 25% will provide an operationally relevant product demonstration within 24 months of ID signature.
- Agile Demonstration - 75% complete final demonstration within three years of ID signature.
- OSD provide significantly more funding (often greater than 30%). In some exceptional cases a majority of project funding, especially during the first two years
- JCTDs not necessarily tied to an exercise. Greater flexibility to establish military utility via operational "real-world" demonstration or specifically designed test/venue
- 80% of JCTDs transition at least 50% of their products to sustainment.

E. Major Performers Not applicable for this item.