Exhibit R-2, RDT&E Budget Item Justification									Date: February 2005
Appropriation/Budget Activity RDT&E, Defense Wide/BA-3				R-1 Item Nomenclature Advanced Concept Technology Demonstration (ACTD), PE 0603750D8Z					
Cost ($ in Millions)		FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
ACTD/P523		212.570	212.915	163.649	163.744	174.549	174.788	179.239	184.216

* FY 2006-2011: $40 million shifted to the new Joint Capability Technology Demonstration (JCTD) program outlined below.

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT: The Advanced Concept Technology Demonstration (ACTD) program began in 1995 with the purpose of demonstrating new, mature technologies in an operational environment and a goal of getting new technologies into the hands of the warfighter as quickly as possible. Early successes included the Predator and Global Hawk unmanned aerial vehicles (UAV). To date, 144 ACTDs have been initiated across the Department of Defense (DoD). In FY 2005 fifteen new ACTDs have been started, bringing the total number of active ACTDs to seventy-nine. The success of the ACTD program continues with forty nine contributing products which were, or are, employed in Operation Iraqi Freedom (OIF). Some of these ACTDs are completing their operational demonstrations in a wartime environment. Examples include the Language and Speech Exploitation Resources (LASER), Expendable Unmanned Aerial Vehicle (XUAV) and the Joint Explosive Ordnance Disposal (JEOD) ACTDs. The streamlined approach to ACTDs brings together scientists and military operators, who insert advanced technologies into live demonstrations, evaluating their military utility in the field while simultaneously tailoring concepts for operational employment.

A key ingredient to the relevant and rapid insertion of technology is the ability for an ACTD to be initiated faster than the traditional two year DoD Planning, Programming, Budgeting, and Execution (PPBE) process. Each year this President's Budget submission provides resources for the next slate of ACTDs which are just beginning their selection process. This allows a rapid/accelerated technology insertion process which helps maintain relevancy to the warfighters, compared to a "standard" PPBE process which requires a minimum of two years to initiate new technologies to begin development for a demonstration several years later. The goal is to speed up the acquisition process by operationally demonstrating capabilities, looking for an eighty percent solution so an acquisition decision can be made quicker---a "try before you buy" approach. ACTDs are selected by the Combatant Commanders (CoComs) and the Services. Oversight is provided by the Deputy Under Secretary of Defense for Advanced Systems and Concepts (AS&C). Each year a new slate of

ACTDs are forwarded to the Joint Requirements Oversight Council (JROC) for mission need validation and prioritization. Upon JROC validation, congressional notification occurs and the new ACTDs are initiated within a few weeks of selection. This selection and validation process can occur in as little as nine months. Each ACTD is included in the Joint Warfighting Science and Technology Plan (JWSTP) as a Defense Technology Objective (DTO) to help leverage the technology being demonstrated and avoid duplication within the Department.

Beginning in FY 2006, a new ACTD business process will be initiated which will take the successful ACTD program and update it to meet the Department's transformational goal of becoming capability vice threat based in its focus. The program will be referred to as the Joint Capability Technology Demonstration (JCTD) program. The JCTD program will include many of the positive aspects of the ACTD program, but will be revamped to meet the defense challenges of the 21st century. The new process will integrate the ACTD program with the new Joint Integration and Development System (JCIDS) developed by the Joint Chiefs of Staff (JCS). Beginning in FY 2006, the Department estimates a three to five year transition period from the current ACTD process to the improved JCTD program. Eventually, JCTDs will replace ACTDs, providing an even faster process that focuses on joint and transformational technologies that are initiated in Science and Technology (S&T) and carried through the difficult transition stage, sometimes referred to as the "S&T valley of death." The new JCTD business model includes a Defense Acquisition Executive (DAE) pilot program which will take a limited number of "joint peculiar" JCTDs past milestone B, through engineering and manufacturing, and into procurement, followed by initial sustainment---a "cradle to grave" approach. The piloted program envisions using joint acquisition activities like the Joint Program Sustainment and Development (JPSD) office, or even U.S. Special Operations Command (USSOCOM), to provide the necessary acquisition compliant and program management functions. The DAE pilot program will give overall programmic oversight of JCTDs that are deemed uniquely joint/combined (i.e., capability directly supports more than one Military Service) and/or transformational. The new JCTD demonstration model will specifically address congressional concerns and recommendations made by the General Accountability Office (GAO) regarding the ACTD program.

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 PE 0604648D8Z (RDT&E/DW BA-4)
- Defense Acquisition Executive (DAE) PE 0605648D8Z (RDT&E/DW BA-5)
- JCTD Procurement (funded in Procurement Defense Wide, OSD Major Equipment: PE 0902198D8Z).

An initial allocation of resources ($40 million) from the ACTD PE has been shifted into these program elements starting in FY 2006, which explains the reduction in the ACTD FYDP line shown in this budget exhibit. During the transition period additional resources will be shifted into the various JCTD program elements until a fully resourced program is established which will support a minimum of ten new JCTDs each year. It is envisioned that the BA-3 JCTD PE will eventually replace the current ACTD BA-3 PE. However during the transition period the JCTD and ACTD program elements will use combined resources to ensure continuity of ongoing ACTDs and program flexibility for the new JCTDs. During this period the program will sometimes be referred to as the JCTD/ACTD program to show the blended and transitioning nature of the process. To establish resource visibility and accountability and to ensure a fully leveraged program, the Military Services and the Defense Advanced Research Projects Agency (DARPA) will be requested to create new program elements in BA-3 and/or BA-4. These program elements will be established during the transition period and will be specifically titled and associated with the JCTD process. DoD recognizes the unique role the ACTD program fills and aims to further improve its effectiveness and relevancy through the establishment of the JCTD program. The business process improvements will address DoD, congressional, and GAO recommendations for rapidly developing and transitioning CoCom relevant capabilities to the joint warfighter in a more cost effective, timely and efficient model.

B. Program Change Summary

	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget	218.167	213.901	202.510	204.714
Current FY 2006 President's Budget	212.570	212.915	163.649	163.744
Total Adjustments:	-5.597	-0.986	-38.861	-40.970
Congressional program reductions	-	-		
Congressional Rescissions	-3.244	-5.036		
Congressional Increases	+10.150	+5.100		
Reprogrammings	-2.100	-1.050		
SBIR/STTR Transfer	-5.597			
JCTD Transfer			-40.000	-40.000
Other			+1.139	-0.970

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

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

D. Acquisition Strategy: N/A

E. Performance Metrics: The JCTD/ACTD performance metrics are centered on how fast relevant joint and/or transformational technologies can be demonstrated and fielded 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 these metrics and helps compare/contrast the current ACTD program with the new JCTD business process model.

Performance Metric	ACTD	JCTD
Project Selection Focus	Threat Based: Shared Military Service and CoCom influence	Capability Based: Greater CoCom influence looking at nearer term needs..
Spiral Technologies	No Metric currently established	Spiral Technology available within one year of JCTD initiation.
Final Demonstration Completed (Starting Point: Approved ID)	3 to 4 years after initiation (Implementation Directive (ID) Signed)	50% completed by the end of the 2nd year. All JCTDs completed by the end of the 3rd year.
Shared Funding and Visibility of resources	OSD provides no more than 30% of the budgeted resources. Funding provided from many different program elements.	OSD provide significantly more funding (more than 50% depending on cost of JCTD), especially in the first two years.
Military Utility Assessment (MUA) conducted by an independent activity	MUA traditionally tied to a specific planned exercise for evaluation	JCTDs not necessarily tied to an exercise. Greater flexibility to establish military utility via operational "real-world" demonstration or specifically designed test/venue
Transition of technology	70% of ACTDs transition at least one product to sustainment	80% of JCTDs transition at least 50% of their products to sustainment

Exhibit R-2a, RDT&E Project Justification								Date: February 2005	
Appropriation/Budget Activity RDT&E, Defense Wide/BA-3			R-1 Item Nomenclature Advanced Concept Technology Demonstration (ACTD): PE 0603750D8Z						
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* FY 2006-2011: $40 million shifted to the new Joint Capability Technology Demonstration (JCTD) program outlined below.

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT: The Advanced Concept Technology Demonstration (ACTD) program began in 1995 with the purpose of demonstrating new, mature technologies in an operational environment and a goal of getting new technologies into the hands of the warfighter as quickly as possible. A key ingredient to the relevant and rapid insertion of technology is the ability for an ACTD to be initiated faster than the traditional two year DoD Planning, Programming, Budgeting, and Execution (PPBE) process. Each year this President's Budget submission provides resources for the next slate of ACTDs which are just beginning their selection process. This allows a rapid/accelerated technology insertion process which helps maintain relevancy to the warfighters, compared to a "standard" PPBE process which requires a minimum of two years to initiate new technologies to begin development for a demonstration several years later. The goal is to speed up the acquisition process by operationally demonstrating capabilities, looking for an eighty percent solution so an acquisition decision can be made quicker---a "try before you buy" approach. ACTDs are selected by the Combatant Commanders (CoComs) and the Services. Oversight is provided by the Deputy Under Secretary of Defense for Advanced Systems and Concepts (AS&C). Each year a new slate of ACTDs are forwarded to the Joint Requirements Oversight Council (JROC) for mission need validation and prioritization. Upon JROC validation, congressional notification occurs and the new ACTDs are initiated within a few weeks of selection. This selection and validation process can occur in as little as nine months. Each ACTD is included in the Joint Warfighting Science and Technology Plan (JWSTP) as a Defense Technology Objective (DTO) to help leverage the technology being demonstrated and avoid duplication within the Department

Initiation of the Joint Capability Technology Demonstration (JCTD) program: Beginning in FY 2006, a new ACTD business process will be initiated which will take the successful ACTD program and update it to meet the Department's transformational goal of becoming capability vice threat based in its focus. The program will be referred to as the Joint Capability Technology Demonstration

(JCTD) program. The JCTD program will include many of the positive aspects of the ACTD program, but has been revamped to meet the defense challenges of the 21st century.

An initial allocation of resources ($40 million) from the ACTD PE has been shifted into these program elements starting in FY 2006, which explains the reduction in the ACTD FYDP line shown in this budget exhibit. During the transition period additional resources will be shifted into the various JCTD program elements until a fully resourced program is established which will support a minimum of ten new JCTDs each year. It is envisioned that the BA-3 JCTD PE will eventually replace the current ACTD BA-3 PE. However during the transition period the JCTD and ACTD program elements will use combined resources to ensure continuity of ongoing ACTDs and program flexibility for the new JCTDs. During this period the program will sometimes be referred to as the JCTD/ACTD program to show the blended and transitioning nature of the process. To establish resource visibility and accountability and to ensure a fully leveraged program, the Military Services and the Defense Advanced Research Projects Agency (DARPA) will also create new program elements in BA-3 and/or BA-4. These program elements will be established during the transition period and will be specifically titled and associated with the JCTD process.

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

FY 2004 General Program Accomplishments

The Department of Defense strengthened ties for cooperative ACTD programs with countries closely supporting the United States in Operations ENDURING FREEDOM and IRAQI FREEDOM. Significantly, Australia and the United Kingdom expressed commitment to expanding integration of efforts with programs that closely parallel the ACTD model.

By virtue of the recognized success of the ACTD Program as a catalyst for transformation, DoD ACTD representatives have been invited to participate in a number of senior Defense Integrated Process Teams focusing on transformation. From consideration of acquisition models for joint capabilities to development of plans to transform the military to new levels of integration, the ACTD program office has been tapped to provide lessons learned for transformation of tactics, techniques, procedures and technologies. Experience with ACTDs also increasingly places ACTD Oversight Executives in a pivotal role for technology transition with a continuous portfolio of demonstrating programs feeding improved capabilities to the warfighter in the field.

The close collaboration between the ACTD program and Combatant Commanders (CoComs) conferred a relevance to ACTD projects confirmed by asymmetric requirements emerging from the Global War on Terrorism (GWOT). In many cases, management teams formed to execute ACTDs were tapped to accelerate fielding of technologies to defeat emergent terrorist threats. These management teams and ACTD-based technologist networks played a leading role in feeding solutions to the Combating Terrorism Technology Task Force (CTTTF) led by Director, Defense Research and Engineering (DDR&E). A DUSD (AS&C) oversight executive for ACTDs was tapped to serve as the CTTTF Chairman reporting to DDR&E. ACTD management teams generating rapid-response technologies and TTPs included many ACTDs: Thermobarics, Counter-Bomb/Counter Bomber (CB/CB), Military Operations in Urban Terrain (MOUT), Joint Blue Force Situational Awareness (JBFSA), Adaptive Joint C4ISR Node (AJCN), Deployable Cargo Screening, Night Vision Cave & Urban Assault, Overwatch, Theater Support Vessel, Tunnel Target Defeat, Urban Recon, Active Denial System, Agent Defeat Warhead, Contamination Avoidance at Seaports of Debarkation, Expendable Unmanned Aerial Vehicle, Joint Explosive Ordnance Disposal, Language and Speech Exploitation Resources, Pathfinder, SPARTAN, Adaptive Battlespace Awareness, Area Cruise Missile Defense, Coalition Theater Logistics, and Joint Area Clearance.

Ten ACTDs were completed in Fiscal Year 2004. The Area Cruise Missile Defense ACTD developed an airspace collaboration and early detection capability called Joint Based Expeditionary Mobile Connectivity Command & Control (JBECC). The JBECC was employed to help protect Washington, DC airspace immediately following the September 2001 terror attacks and remains in this role as part of Operation Noble Eagle, less than one year after it was initiated as an ACTD. Numerous ACTD software products were integrated within operational systems, such as four Joint Theater Logistics software tools to the Global Combat Support System. Some ACTD products remained in theater as part of Kosovo peacekeeping operations. Almost 50 ACTDs participated in Operations Enduring Freedom and Iraqi Freedom, as well as Homeland Security/Homeland Defense operations. Thirteen new ACTDs were validated by the JROC and initiated in FY 2004 (see specific accomplishments below): Advanced Tactical Targeting Technology, Agile Rapid Global Combat Support, Coalition Reception Staging, and Onward Movement, Coalition Shared Intelligence Network Environment, Future Tactical Truck System, Joint Precision Airdrop System, Joint Unmanned System Common Control, Man Portable Threat Warning System, Multi-Sensor Aerospace/Ground Joint ISR Interoperability Coalition, MAGNUM, Protected Landing and Takeoff, Psychological Operations Global Reach and Theater Effects-Based Operations.

The data call for FY 2005 ACTDs began during the 1st Quarter of Fiscal Year 2004. Twenty-four ACTD candidates, of the ninety-five received from the Unified Combatant Commands, the Services, Defense agencies and industry, were considered for final

selection. Candidates cover a broad range of technologies and needs, prominently including the GWOT, network-centric warfare, adaptive combat logistics support, force health information for joint theater commanders, coordination of coalition logistics, production of critical, time-sensitive infrared, MASINT imagery, unmanned aerial vehicles for special operations units, and unattended surveillance of maritime, littoral and harbor areas. These candidates were screened for technical maturity, operational relevance and transition potential by the "Breakfast Club" and prioritized by each of the Combatant Commands and Services. The JROC determined the final validation needs and prioritization, establishing the final list of fifteen FY 2005 new ACTD projects on December 2, 2004. Congressional notification was forwarded a few days later and resources became available in early January to begin funding the FY 2005 ACTDs.

FY 2005, FY 2006 and FY 2007 General Program Plans:

DUSD (AS&C) will continue the process of initiating and transitioning ACTDs. As noted in the introduction, a new business process is envisioned for the ACTD program as DoD shifts from a threat based to a capability based focus. The ACTD program will eventually be replaced by the Joint Capability Technology Demonstration (JCTD) program. The 3-5 year transition period from ACTDs to JCTDs will begin in FY 2006. Emphasis for the FY 2005/2006 JCTD/ACTD program will be placed on serving the unique requirements of joint Combatant Commanders, with coalition and transformational aspects highlighted as "value added" attributes of new and continuing demonstrations. As in FY 2004, a strong commitment to early and aggressive transition management will aim to sustain the capabilities successfully demonstrated in JCTD/ACTDs. Exploration of new coalition partnership agreements and integration of efforts with the Joint Staff JCIDS process will characterize JCTD/ACTD staff support efforts. As noted earlier, the final validation of the FY 2005 ACTD projects has been accomplished by the JROC. The fifteen FY 2005 prioritized and validated ACTDs are described below. Numerous demonstrations will be conducted in FY 2005 for those ACTDs initiated in previous years. Nominations of proposed FY 2006 JCTD/ACTDs were received in December 2004, and will be reviewed in January 2005 by the "Breakfast Club." Continued staffing and refinement of the FY 2006 proposals will continue through March/April 2005. Many of the FY 2006 projects will be funded in the newly formed JCTD program designed to leverage the JCIDS process and enhance the program's resource stability, and provide a better opportunity to transition into acquisition programs. Funding will continue in FY 2005 for active ACTDs initiated in Fiscal Years 1997 through 2004 that have not been completed or transitioned to acquisition programs. In FY 2005, congressional added $5.1 million to ACTDs and joint enabling technologies that hold promise for break-through technologies. The congressional adds included: Low Cost Autonomous Attack System ($1.0 million); Remote Unattended Sensing System ($1.05 million), and the SecureD Hardware Encryption Device ($2.0 million). The congressional add for the Maria Tactical Mapping System ($1.05 million) was appropriately transferred to the Foreign Comparative Test (FCT) program (PE:

0605130D8Z) to meet the intent of Congress. Funding for the new FY 2005 ACTDs, including potential midyear starts, is approximately $40 million. (Total ACTD funding in FY 2005: $212.915 million).

Funding will continue in FY 2006 and FY 2007 for active ACTDs initiated in Fiscal Years 2000 through 2005 that have not been completed or transitioned to acquisition programs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Funding available for initiating new FY 2006 JCTD/ACTDs will be approximately $45 million. These funds are available from the current ACTD program and the newly established program element for JCTDs (0603648D8Z). (Total ACTD funding in FY 2006: $163.649 million). Funding available for initiating new FY 2007 JCTD/ACTDs will be approximately $45 million. (Total ACTD funding in FY 2007: $163.744 million). The Department estimates starting ten new JCTD/ACTDs in both FY 2006 and FY 2007.

ACTD Direct Program Support: The ACTD program contains four budget lines broken-out from the specific ACTDs projects. The direct funding line is used to provide support for the entire ACTD program (versus individual ACTDs). These four budget lines include (1) Unified Combatant Commander; (2) ACTD Pre-Transition Support; (3) Interagency Classified Projects, and (4) Joint enabling technologies that are either directed by the Congress or initiated by DUSD (AS&C).

1) Unified Combatant Commander (UCC) Direct Support: The UCC's play an essential role in the selection, validation, demonstration, and transition of ACTDs. Many ACTDs have funding allocated for the UCCs 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 UCCs, based on the number of ACTD projects being sponsored and the intensity of effort required. The Department also envisions that the UCCs will play a greater role in the development, support and coordination of JCTD/ACTDs that are coalition oriented (within their specific AOR). UCC direct program funding is estimated between $4.0 and $5.0 million per year.

2) ACTD Pre-Transition Support: The ACTD 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 ACTDs to the warfighter, the SECDEF established the goal of increasing the number of ACTDs evolving into formal acquisition programs. In order to enhance this transition effort and to respond to GAO recommendations in earlier years, the ACTD program continues to support a pre-transition line in the ACTD budget submission. Funding for pre-transition initiatives will

be in the approximately $3.0 million per year.

3) Interagency Classified Support for ACTDs: ACTDs 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 between $9.0 and $10.0 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 ACTD program to investigate the military utility of these technologies. DUSD (AS&C) also becomes aware of promising technologies which may have transformational application to ACTDs. The need for these technologies may not be realized until an ACTD 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 ACTDs. Four enabling technologies are highlighted in this year's budget submission:

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007
Rosetta STONE	3.00	3.500	0.000	0.000

Rosetta STONE (Single integrated picture Topology-driven Optical Nonlinear Engine—SIP-STONE) is a promising joint enabling technology. The Department will develop this enabling technology capable of integrating multi-source sensor data/track inputs from all available sources, correlating the data and fusing it into a single integrated picture. The technology combines the Rosetta gateway technology from the LINK 16 ACTD (1999) that enables multi-datalink translation and forwarding of data with the STONE optical correlator to provide near real-time fusion, sensor registration and correlation of information sources. The overall objective is to reduce engagement decision time, improve target location estimates, and provide enhanced combat identification (CID) from disparate sensors. USJFCOM is the operational manager of the SIP-STONE enabling technology.

- FY 2004 - Further STONE algorithm development with increased number of sensor information sources. Participate and demonstrate expanded capability in JEFX 2004 at Nellis AFB NV.
- FY 2005 - Operational demonstration of Rosetta STONE full capability at demonstration.

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007

Secure Hardware Data Encryption Device (SecureD)	2.400	2.000	0.000	0.000

Since 2003 Congress has provided additional resources for the Secure Hardware Data Encryption Device (SecureD) project. The Department will develop an enabling capability to insert encryption methods to protect information at rest by interrupting the data bus to hard disk drive path within the computer, improving operational security in the event of lost or overrun computer assets.

- FY 2004 – Commenced the U.S. process for NIST and DoD Common Criteria certification for a desktop workstation (expected completion early FY 2005). Began miniaturization and transition to laptop computer form factor. Began identification of pilot sites/early implementer venues.

- FY 2005 – Will complete Common Criteria certification and conduct pilot sites evaluation and user familiarization. Transition to commercially available product for incorporation into DoD networks. Present the SecureD product to potential DoD and other federal government agencies using reality based operational scenarios.

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007
Remote Unattended Sensing System (RUSS)	2.100	1.050	0.000	0.000

For the past two years Congress has provided additional resources for the Remote Unattended Sensing System (RUSS). Development, design and technology integration of RUSS into the Bio Ops Plan. RUSS will provide a modular platform for sensing biological warfare activity over long periods of time in a variety of sites, including remote or hostile/denied locations. RUSS will support force and area protection requirements for CoComs and civil authorities. RUSS will accept a wide variety of present and future sensors and communications devices.

- FY 2004 - Support the Pacific Area Bio Ops Project to develop Bio Defense Capabilities through the Chemical Biological Radiological Technology Alliance (CBRTA). Develop urban unattended ground sensors, in conjunction with CBRTA, to support the Night Vision Cave and Urban Assault ACTD.
- FY 2005 - Continue FY 2004 activities. Develop, test, and demonstrate hardware and software in conjunction with scheduled NVCUA ACTD exercises. Integrate results with existing tagging, tracking, and locating (TTL) initiatives.

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007

JP-8 Pilot Program	2.000	0.000 (note1)	0.000	0.000

Note 1: * $4.5 million funded in FY 2005 RDT&E , Army Appropriation, page 251, line 14 under Combat Vehicle and Automotive Technology

This project is to investigate the feasibility and merits of a capability to produce in-theatre, from local natural gas, a single synthetic fuel that is usable in ground vehicles, aircraft, and ships. The products of this effort will be test reports and evaluations, feasibility study reports, engineering design studies, and concept of operations. The three key areas of this effort will be: 1) definition of the necessary chemical formulation, optimize the hull design for the barge mounted plant, military usefulness of a modular size plant. Congress provided additional resources in FY 2002 ($3.5 million) and again in FY 2004 for the syntroleum technology JP-8 Pilot Program in the ACTD program element, however the FY 2005 add was in the Army RDT&E Appropriation.

- FY 2004 - Optimized the hull design for the barge for reduced weight and cost of the hull while increasing storage capability. DoD and DoE labs assessed viability of the draft fuel specifications developed in FY 2003 by completing additional testing using a surrogate synthetic aromatic component and when available, fuel with the synthesized aromatic. Conducted a Military Utility Assessment for modular synthetic fuels plants having a capability of providing fuel, power and water to forward-based forces. Continued development of a formulation for synthetic JP-8 / JP-5, expressed as a draft specification, which ensures the fully synthetic fuel is freely interchangeable with conventional fuel in the legacy fleets.
- FY 2005 - Continue Military Utility Assessment for modular synthetic fuels plants having a capability of providing fuel, power and water to forward-based forces. Continue development of a formulation for synthetic JP-8 / JP-5.

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007
Platform Testbed for Advanced Sensors (PTAS)	0.000	1.000	3.000	3.000

The JCTD/ACTD program has a critical need for a medium-high altitude airborne platform testbed to support worldwide projects and demonstrations of various technologies ranging from scientific/experimental to operational/intelligence missions. NASA currently operates the sole remaining operational long-wing WB-57 aircraft. These aircraft have been determined useful to support the JCTD/ACTD program as a demonstration platform of new technologies. The JCTD/ACTD program will provide resources to NASA via the USAF using an Interagency Agreement. DUSD (AS&C) will help establish mission requirements & priorities, defining payload configurations, and the demonstration/testing schedule. NASA will provide maintenance support for the aircraft and engineering support for payload integration. The JCTD program estimates 200 flight hours will be required annually beginning in FY 2006. Support also includes use of hangar and office space for experiment planning/data processing.

- FY 2005 - Program initiation, commence flight hour program for demonstrations and testing.
- FY 2006 - Approximately 200 planned flight hours for technology demonstrations and testing.
- FY 2007 – Approximately 200 planned flight hours for technology demonstrations and testing.

Joint Enabling Technology Title	FY 2004	FY 2005	FY 2006	FY 2007
Persistent Herk	5.400	0.000	0.000	0.000

The Persistent Herk (PH) Program will ensure the development of a timely, energetic, and cost effective means to improve the C-130 aircraft/equipment to meet the worldwide contingency operations of the Special Operations Forces. These funds are accomplishing system design, engineering, integration, manufacture, demonstration planning, and flight test of wing tip mounted fuel tanks on a C-130. The PH program is designed to add increased performance to the current US C-130 fleet. The prime objective of the modification is to help the heavily loaded C-130 aircraft operate more efficiently during the end of the takeoff run and initial climb phases of their flight. It is anticipated that the technology enabling capability may also benefit the Advanced Tactical Laser (ATL) and the Viper Strike ACTDs, both are expected to use the C-130 as a primary platform.

Operations of heavy weight C-130s from airports in hot ambient temperatures and higher altitude environments have resulted in aircraft losses due to current design features. An immediate objective of the PH program is to give the heavily loaded C-130s an increased margin of performance or safety factor through a wing tip tank and resultant aerodynamic modification during the initial phases of flight. These modifications are needed to give the C-130 aircrews a safety margin they currently do not have as they continue to operate in these marginal environments. A added benefit of the modification is an increase in overall flight efficiency.

FY 2004 - FY 2007 ACTD Individual Project Accomplishments and Plans (by ACTD year group). The following list of accomplishments, plans and estimated resources is provided for each ACTD starting in FY 1997. Only active ACTDs are broken-out in the follow sections. Section F of this exhibit provides a resource summary of the all ACTDs beginning with 1997.

FY 1997 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Advanced Health and Usage Monitoring System (JAHUMS)	0.800	0.000	0.000	0.000

Provide a means to monitor the health and usage of individual aircraft utilizing onboard sensors and diagnostics. Demonstrate an open architecture so that modules from multiple vendors can be inserted in baseline systems. The user sponsor is the Joint Staff (J4).

- FY 2004 – Joint Advanced Health and Usage Monitoring System (JAHUMS) In-flight Reporting System demonstrated extended, round-the-clock, real-time monitoring of aircraft location, operational states and diagnostic parameters during a cross-country flight from NAS, Patuxent River, MD to NAS, North Island, CA. The JAHUMS Post-Flight Animated Debrief system was implemented at the Navy HSL-41 squadron and the JAHUMS Engine Diagnostic Expert System was implemented at HSL-41. These systems are the first of their kind being demonstrated on DOD helicopters. Conducted system training and operational fielding of JAHUMS technologies to units at the HSL-41 squadron and at the Army 101st Airborne Division, Ft. Campbell, Kentucky. JAHUMS Engine Diagnostic Expert System was integrated into thirty UH-60L helicopters as part of the Army Fleet Management demonstration program. The Military User Assessment (MUA) was started and maintenance and operations data for the MUA are being collected and analyzed.
- FY 2005 – Complete the Military User Assessment and conduct extended user evaluations at HSL-41 and at the 101st Airborne to refine CONOPS and system software. Support interim capability and conduct necessary modifications, testing and analysis to support transition to the Navy Military Flight Operation Quality Assurance (MFOQA) program, Navy H-60R/S production line with the Integrated Mechanical Diagnostic System (IMDS), and to the Army UH-60M. Complete the final MUA report.
- FY 2006 – Support residual capabilities and transition to the H-60R/S and UH-60M aircraft. Complete the ACTD.

FY 2000 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
CINC 21	1.500	0.400	0.000	0.000

Develop, demonstrate, assess and transition the concept of operations, hardware and software necessary to provide a theater Combatant Commanders with a command and control (C2) environment that addresses improved situational awareness and decision making tools across multiple simultaneous crisis operations and theater engagement activities. The User Sponsor is PACOM.

- FY 2004 - Completed Extended User Evaluation at Pacific Command (PACOM) and Strategic Command (STRATCOM). Installed and supported CINC 21 capability in European Command (EUCOM). Completed computer-based training, CONOPS,and TTPs. Conducted transition preparation. Ensured software refresh and functionality. Transitioning capability to next-generation GCCS(JC2) via the Net-Centric Capability Pilot (NCC-Pilot)to stand up and demo in October 2004. CINC21 capability being incorporated into STRATCOM program called D-Side to support National and Strategic Planning for Global Strike. Completed the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Aerial Surveillance and Reconnaissance	2.900	0.600	0.000	0.000

Provide near-real-time, exploited ground surveillance data to multiple echelons of command between critical NATO allies. Develop a concept of operations and tactics, techniques and procedures for coalition employment of ground moving target indicators (GMTI) and synthetic aperture radar capability. U.S. Training and Doctrine Command System Manager / Joint STARS is the operational sponsor.

- FY 2004 – Demonstrated interoperability during an integrated simulation exercise. Assisted in development of Standard NATO Agreement (STANAG) 4607 for GMTI interoperability. Continued transition of CAESAR products to the participating nations, NATO and SHAPE. Products include tools (e.g. trackers and coalition test bed); Operational Concepts for interoperability (TTPs, measures of effectiveness (MOEs), measures of performance (MOPs)); and architecture and design (interfaces, interface control diagrams (ICDs) and Standard NATO Agreements (STANAGs)). Forwarded CAESAR products to Joint Forces Command (USJFCOM) for combatant commander distribution, and to Multi-sensor Aerospace/ground Joint Intelligence, Surveillance and Reconnaissance (ISR) Interoperability Coalition (MAJIIC) ACTD operations manager.

- FY 2005 - Conduct final integrated simulation exercise and utility assessment at the NATO Communications, Command and Control Agency, to test implementation of STANAG 4607 by the seven CAESAR participating nations (Canada, France, Germany, Italy, Norway, the United Kingdom, and the United States). Publish final military utility assessment report. Transition products to NATO STANAGs and U.S. concepts of operation, and tactics, techniques, and procedures, as overseen by the Air Force Command and Control, Intelligence, Surveillance, and Reconnaissance Center. Conclude interim capability support phase to complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Communication/Navigation Outage Forecasting System (C/NOFS)	1.000	0.000	0.000	0.000

Predict the satellite space environment and alert control operators to place satellites in protective mode when disturbed, ionospheric conditions are likely. A prototype operational demonstration of forecasting capability is planned during the first years of space operations, with planned transition in Fiscal Year 2006 to the DoD Space Test program of record and Air Force Research Laboratories. Air Force Space Command is the operational sponsor. The C/NOFS technology has been deployed to six operational sites.

- FY 2004 – Continued conducting payload test, spacecraft integration and launch vehicle integration. Continued Scintillation Network Decision Aid (SCINDA) assessments and user evaluation. Conducted a limited military utility assessment and demonstration of the data center at Hanscom AFB, MA.
- FY 2005 - Launch spacecraft aboard a Pegasus XL rocket from Ronald Reagan Ballistic Missile Defense Test Site, Kwajalein Atoll, Republic of the Marshall Islands, into a low-inclination, equatorial orbit. Conduct on-orbit checkout, enter survey and forecasting modes with limited operational use. Continue survey and forecasting modes. Perform extended user evaluation.
- FY 2006 – Continue extended user evaluation and prototype operational demonstration of forecasting capability. Conclude interim capability support phase to complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Computerized Operational MASINT Weather (ComWX)	0.000	0.000	0.000	0.000

Provide near real-time environmental intelligence products for high-value targeting support, using existing national assets with a foundation to exploit future systems. The user sponsor is U.S. Central Command.

- FY 2004 – Completed state-of-the-art dissemination architecture for rapid dissemination of environmental intelligence data to theater. COMWX capabilities folding into future sensor. CENTCOM requested a two-year extension of effort due to new

capabilities surfaced under support to OEF and OIF. Extension granted due to new operational needs and strong implications for support to Homeland Defense. Otherwise, utilize the demonstration for the Final MUA Report. Building module to DODIIS Certified Workbench under other Congressional funds as spin-off from COMWX to ensure leave-behind processing capability.

- FY 2005 – Continue support to OEF and OIF, as well as the Global War on Terror, as tasked. Improve product lines for Environmental Intelligence Production. Fold environmental capabilities developed into other capability production lines to help in data reduction improvements. Adapt algorithms into future sensor capabilities and fold into DODISS certified workbench. Engage with intelligence and weather communities to ensure future sensor requirements learned from COMWX are included in the requirements architecture.
- FY 2006 – Complete final MUA report. End the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Content-Based Information Security (CBIS)	0.000	0.000	0.000	0.000

Demonstrate a multi-level security solution that can support joint, coalition, and interagency operations. The user sponsor is U.S. Joint Forces Command.

- FY 2004 – Completed contracted activity for module specification development needed for incremental delivery of certified Type 1 multi-security enclave encryption device for joint, interagency and coalition application. Delivered first prototype to Joint Forces Command for CONOPS development and preliminary operator feedback. Began planning military utility assessment in conjunction with US Northern Command for FY05. Negotiated transition activity into programs of record with primary multi-level security solutions need.
- FY 2005 – Continue preparation for User Assessment in 2005 currently scheduled for December 2005. Complete contract activity to produce a prototype certifiable high assurance multi-level security device for delivery to Navy for production/implementation on DoD and Coalition networks. Complete the final military utility demonstration and the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Global Monitoring of ISR Space Systems (GMSIS)	0.200	0.000	0.000	0.000

Demonstrate the value of providing near-real-time information on potential threats to theater operations posed by commercial space systems. The user sponsor is U.S. Strategic Command.

- FY 2004 - Completed the final demonstration of the military utility of the system and continued support of real world operations.

Transitioned to sustainment by US Strategic Command and the Defense Intelligence Agency. Completed the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Intelligence, Surveillance and Reconnaissance (JISR)	0.000	0.000	0.000	0.000

Provide the Joint Force and Early Entry Force commanders the ability to integrate tactical reconnaissance and tactical operational sensors to improve situational awareness. The user sponsor is U.S. Central Command.

- FY 2004 – Fielded JISR to US V Corps for OIF I. Supported JISR deployment as V Corps transitioned to become JTF-7 and was relieved by US III Corps. Completed final assessment of military utility, operational effectiveness, suitability, and interoperability. Transition Memoranda of Agreement executed with program executive officers (PEOs) with responsibilities for programs of record.
- FY 2005 – Deliver JISR prototype capabilities to CENTCOM CENTRIXS coalition networks. Complete JISR product sustainment support to respective Service and joint and US-led coalition C4ISR users/Warfighters. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Restoration of Operations (RestOps)	1.700	0.000	0.000	0.000

Demonstrate the tools required to prepare for and immediately react to the consequences of a chemical or biological (CB) weapon attack against a combatant commander-identified, forward-deployed airfield or logistics facility, with minimum disruption to and degradation of throughput. Integrate concepts of operation (CONOPS) and Combatant Commander planning tools to identify the improvements needed in current policy for restoration of operations. U.S. Pacific Command is the operational sponsor.

- FY 2004 – Published final report. Transitioned technology and lessons learned via the Joint Requirements Office for Chemical, Biological, Radiological and Nuclear Defense. Conducted residual training and support. Transitioned RestOps Information Management System (ROIMS) to the Theater Battle Management Core Systems Unit Level (TBMCS-UL) in more than 40 locations worldwide. Provided changes in non-materiel tactics, techniques and procedures for five major CB operational areas. Influenced US Air Force CB warfare CONOPS development.
- FY 2005 - Conclude interim capability support phase to complete the ACTD.

FY 2001 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Active Network Intrusion Defense (ANID)	1.700	1.200	0.000	0.000

Improve DoD's ability to protect, monitor, analyze, detect, and respond to unauthorized activity within DoD information systems and computer networks. ANID will improve response time and provide autonomic response capabilities to network intrusions, as well as improving collaboration between agencies to demonstrate a capability for responding in real-time to network intrusions by making changes to network devices like routers, firewalls, intrusion sensors, etc. The user sponsor is U.S. Strategic Command.

- FY 2004 - Concluded the development of ANID and began transition efforts. Deployed ANID prototype to JFCOM, STRATCOM, ARSTRAT, and JIOC. Continued CONOPS, Tactics, Techniques and Procedures development and documentation.
- FY 2005 - Complete implementation at CoCom demonstration sites, Naval Postgraduate School, and Joint Warrior Interoperability Demonstration (JWID) sites for final MUA, Extended User Evaluation and transition to DISA NETOPS and Computer Emergency Response Teams (CERTs). Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Adaptive Battlespace Awareness (ABA)	1.700	1.100	0.000	0.000

Demonstrate the potential of the Global Command and Control System (GCCS) Common Operating Picture (COP) to provide relevant information to support Combatant Commanders. ABA enhancements to the COP are configuring information and COP views to meet specific, time-sensitive mission requirements. The user sponsor is U.S. European Command.

- FY 2004 - Integrated spiral releases of ABA systems into Common Operating Environment, GCCS-I3 versions as user evaluations of residuals are evaluated with training plans and concept of operations. Assessed the final spiral 6 performance at all demonstration sites in EUCOM. Began implementation of transition plan. Reviewed ABA adoption by other combatant commanders, with priority on CENTCOM demonstration and assessment. Completed the final demonstration and preparation of the military utility assessment report. ABA capabilities were employed in support of the Olympics, Homeland Defense COP and OIF (Operation Iraqi Freedom).

- FY 2005 – Demonstration and assessment of an additional logistics-based common operational picture spiral for EUCOM and CENTCOM, as well as incorporating extended user evaluations of residuals. Additional spiral will provide COP display of logistics in-transit visibility in support of OIF. Finalize concept of operations. Execute plan for transitioning ABA into GCCS-I3. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Tactical Laser (ATL)	5.600	3.600	1.200	0.000

Integrate a moderate power laser, uncoiled optics, and existing fire-control systems onboard a C-130 aircraft. The user sponsor is U.S. Special Operations Command.

- FY 2004 - Completed the design and began the build-up of the ATL ACTD system. Accomplished the subsystem and system Critical Design Reviews (CDRs) and the final reviews of the system component designs before assembly and check out. Procured long-lead components and began acquisition and delivery of ATL ACTD system hardware and software. Began the Military Utility Assessment (MUA) using ATL simulations and component hardware testing in conjunction with planned military exercises. Began modification of the integration and test facilities at Kirtland AFB, NM
- FY 2005 – Began testing the ATL ACTD subsystems and continue the MUA. Begin component integration (i.e. optics module, laser generation module), component testing, and subsystem integration and testing. Complete modification of the ATL ACTD host aircraft. Complete ground test of the surveillance and beam control systems and begin integrating them onto the C-130 aircraft. Begin ground assembly, integration and test of the high-power flight test laser module. Complete modifications of the integration and test facilities.
- FY 2006- Begin flight test of the ATL ACTD system and continue the MUA. Complete build-up, integration and ground test of the high-power flight test laser module and integrate the entire ATL ACTD system on the C-130 host aircraft. Complete ground verification tests of the entire integrated ATL system. Commence integrated system flight testing.
- FY 2007 - Complete MUA and commence interim capability support.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Technology Ordnance Surveillance (ATOS)	0.700	0.700	0.000	0.000

Demonstrate a system that will provide ordnance managers (and therefore the warfighter) near real-time total asset visibility (i.e. war reserve storage, battlefield distribution, and the environmental piece of in-transit) of their ordnance stockpile while also providing data

for predictions of future condition and performance. The user sponsor is U.S. European Command.

- FY 2004 - Conducted full system field demonstration at NAVSEA Indian Head. Completed Military Utility Assessments (MUAs) at retail (Army Depot Miesau, Germany), wholesale (Army Depot, Crane, Indiana) and shipboard (U.S.S. Ponce and U.S.S. Truman) sites. Commenced communication with Ammunition Inventory System (AIS) Managers from each Service to begin discussions on ATOS integration into their systems. Completed transition plan. Incorporated design improvements when identified during MUA and as MUA schedule permitted. Revitalized Transition IPT to ensure the main requirements from each service are addressed in final product for transition.
- FY 2005 – Integrate ATOS into service AISs. Implement recommended changes from MUA. Continue installation planning. Install ATOS system at select sites as determined by resource sponsor. Complete the ATOS ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Combat Identification (CCID)	5.700	3.000	1.800	0.000

Demonstrates and transitions CID solutions that significantly reduce fratricide and enhance combat effectiveness of allied and coalition forces operating in both traditional and ad-hoc coalitions. Joint Forces Command (JFCOM), in conjunction with Allied Transformation Command, is working with the coalition partners to conduct the final ACTD demonstration in the United Kingdom, September 2005. JFCOM is the User Sponsor.

- FY 2004 - Completed Radio Based Combat Identification (RBCI) improvements and technically tested ground based RBCI to insure specification compliance, deployability and interoperability with fielded systems. Operationally demonstrated RBCI. Completed feasibility study of integrating RBCI into UK BOWMAN radio VHF voice mode. Continued Battlefield Target Identification Device(BTID) technical interoperability testing with UK, and France. Conducted operational demonstration of the BTID during CJFTEX-04 exercise. Completed a study in support of Fixed Wing Close Air Support (CAS) friendly forces identification issues resulting in selection of Radio Frequency (RF) Tags for future technical and operational demonstration.
- FY 2005 **–** Technically test the RBCI Air SINCGARS (ASIP) Improved Radio and Digital Knee-Board interface integrated on to an Apache Aircraft and RBCI ASIP on to UAV. Technically demonstrate RBCI interface with Fixed Wing CAS aircraft. Technically test different analogue and digital RF Tags in preparation for 2005 Operational Demonstration. Continue development of CONOPS, TTPs and training package. Conduct the final ACTD operational demonstration and Joint Military Utility Assessment of the NATO BTID, RBCI, RF Tags and Dismounted Soldier Identification Device (DSID). Continue implementation of transition strategy through initiation of Extended User Evaluation and delivery of products to programs of

record pending successful JMUA.

- FY2006 – Continue execution of the transition plan including Extended User Evaluation. Finalize CONOPs, TTPs and training package. Complete CCID ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Theater Logistics (CTL)	2.200	0.000	0.000	0.000

Integrate logistics information and combat support tools among coalition forces. The user sponsor is U.S. Pacific Command.

- FY 2004 – Integrated capabilities to support combatant commands within the architecture framework. Completed all technical testing and integration. Conducted a successful final demonstration and Military Utility Assessment during Multi-National Experiment 03 and COBRA GOLD 04. Drafted transition plan. Began transition and plan to field residual capabilities and to migrate logistics tools to CENTRIXS Network.
- FY 2005 – Complete migration of logistics tool sets to CENTRIXS Network and conduct operational testing with Australian Defense Force, USPACOM, and USTRANSCOM.
- FY 2006 – Complete transition of CTL applications on CENTRIXS Network and complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Hunter Standoff Killer Team (HSKT)	6.200	4.200	1.400	0.000

Integrate and demonstrate joint precision targeting of time sensitive targets at standoff ranges and reduced sensor-to-shooter timelines using manned/unmanned aircraft teams and cognitive decision-aiding technologies, and transition into Programs of Record (POR). The User Sponsor of HSKT ACTD is PACOM. The ACTD's top level metrics include increased identification range for manned rotorcraft systems and standoff range for weapons engagement, reductions in mission planning, mission execution times and battle damage assessment timelines, and increased lethality and survivability.

- FY 2004 - Completed software builds for Mobile Commander's Associate (MCA) and Warfighter Associate (WA), providing capability for AH-64 Longbow Apache helicopter and Army Airborne Command and Control System (A2C2S) Blackhawk helicopter to control UAV with Multi-mission Optronic Stabilized Payloads (MOSP) 280 sensor. Continued development of CONOPs, TTPs and training package. Completed TCDL / MOSP 280 sensor ground and flight testing. Completed Army / Navy LINK-16 simulated message transfer. Completed integration of Hunter UAV precision targeting 3S MOSP sensor with laser

designation capability. Completed integration of A2C2S MCA with LINK-16 and TCDL. Conducted coordination for operational exercises and demonstrations scheduled to begin during 4Q, FY 2005.

- FY 2005 – Complete final software builds for MCA and WA, providing capability for AH-64 A2C2S helicopters to control UAV with3 sensor MOSP. Complete ground and flight testing of Hunter UAV with TCDL and 3 Sensor MOSP. Complete all hardware in the loop integration, ground and flight tests of the MCA A2C2S and WA Longbow Apache systems. Complete A2C2S Link-16 / F/A-18 OFP communications demonstration. Complete system flight demonstration and evaluations involving UAV, AH-64D WA, A2C2S MCA and F/A-18, and install hardware and software into production AH-64D Longbow Apache aircraft for use during operational demonstrations and Extended User Evaluation (EUE). Complete manned / unmanned teaming simulation and warfighter training and conduct operational demos. Continue development of CONOPs / TTPs, training package and execute Transition Plan.

- FY 2006 – Complete EUE of residual package. Complete Operational Demonstrations and Joint Military Utility Assessment (JMUA). Continue coordination with joint and service organizations to refine / complete the Transformation Change Package focusing on DOTMLP-f recommendations. Finalize CONOPS / TTPs and Training package. Complete HSKT ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Area Clearance (JAC)	1.100	0.000	0.000	0.000

Demonstrate de-mining and explosive ordnance disposal equipment for area clearance of airfields, fuel/ammunition distribution points, main supply routes and other rear-area activities. The user sponsor is U.S. Joint Forces Command.

- FY 2004 - Concluded the MUA demonstration process with MUA III at Camp Lejeune, North Carolina. US Joint Forces Command (USJFCOM) prepared the final Military Utility Assessment (MUA) report. Matured efforts to deploy the Change Detection technology to real world operations in support of route clearance missions. Three initial Change Detection systems have been fabricated for the Marine Corps for use with their UH-1N helicopter to help find indicators of road-side threats and landmines buried on a route. Two additional systems were fabricated and all five are integrated with the USMC F-18D Advance Tactical Air Reconnaissance Systems (ATARS) and will remain with the Marine Corps as residuals for possible deployment. Other transition efforts: completed new draft doctrine updates for area and route clearance missions; staffed new requirements for new JAC ACTD area and route clearance capabilities through TRADOC; Air Force and USMC EOD acquisition of the Telepresent Rapid Aiming Platform (TRAP) and development of draft Doctrine and TTP. Transitioned JAC ACTD Change

Detection Work Station technology into a new Science and Technology Objective (STO).

- FY 2005 - Provide residual transition support and complete the JAC ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Loitering Electronic Warfare Killer (LEWK)	0.100	0.000	0.000	0.000

Planned to demonstrate a low-cost unmanned combat aerial vehicle weighing 60 pounds and capable of carrying a combined 200 pound lethal and non-lethal payload, with eight hours of endurance. USEUCOM is the operational sponsor.

- FY 2004 – Due to issues of technological maturity, this project was placed on hold in mid-2003 pending an Oversight Review Group (ORG) meeting. Accepting the CoComs assessment, the ORG recommended the ACTD be terminated and the technology returned to the technical base for further development. Minimum close-out costs were incurred as this ACTD was terminated in early FY 2004.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Network-Centric Collaborative Targeting (NCCT)	5.600	1.800	0.600	0.000

Network operational intelligence, surveillance, and reconnaissance sensors to significantly improve the capability to detect, identify, and geo-locate time-critical targets. The user sponsor is U.S. Central Command.

- FY 2004 – Successfully completed Interim Military Utility Assessment (IMUA) at JEFX04 resulting in favorable transition recommendation from USCENTCOM. Began work to identify interim network communications equipment for transition.
- FY 2005 – Resolve action items from the IMUA. Live-Fly Demonstration to include US Navy participation and UK NIMROD aircraft using interim (transition) network communications system. Update Interim MUA to final. Provide initial support to USAF for capability transition.
- FY 2006 - Conclude interim capability support phase and complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Personnel Recovery Extraction Survivability Aided by Smart Sensors (PRESS)	6.200	0.000	0.000	0.000

Demonstrate and transition near real-time, automated, precision evader location and tracking systems, enhanced survivability and situational awareness technologies. Develop Concept of Operations (CONOPs) and Joint Tactics, Techniques and Procedures (JTTPs). Joint Forces Command JFCOM is the User Sponsor.

- FY 2004 – Fielded multiple Global Personnel Recovery System (GPRS) devices with the 301st Rescue Squadron to support Operation Iraqi Freedom which reduced rescue response time by 90 minutes. Continued miniature GPRS design, fabrication and testing. Developed prototype space relay capability and tested in high-altitude / tactical applications. Conducted technical and operational demonstrations and Interim Joint Military Utility Assessment of integrated PRESS systems, including survivability, C4ISR, and survivor / evader technologies. Continued development of CONOPs, JTTPs and training package. Continued transition planning activities for follow-on acquisition of PRESS technologies.
- FY 2005 **–** Continue evaluation of PRESS technologies during Extended User Evaluation. Integrate and assess prototype space relay capability into high-altitude/tactical applications. Continue transition activities and initiate acquisition of PRESS ACTD technologies for follow-on development, procurement and fielding pending successful JMUA. Finalize CONOPs, TTPs, training package and Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) recommendations.
- FY 2006 **–** Complete EUE of PRESS ACTD technologies and transition to Program of Record. Complete the PRESS ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Tactical Missile System - Penetrator (TACMS-P)	0.600	0.000	0.000	0.000

Demonstrate integration of the Army Tactical Missile System booster with a Navy reentry vehicle to provide a high-availability, all-weather, survivable, and short-response-time means to destroy hard and deeply buried targets. The user sponsor is U.S. Pacific Command.

- FY 2004 – Successfully completed first flight test. Second flight test completed Nov 2004. Third flight and residual deployment delayed until FY 2005.
- FY 2005 - Complete and evaluate flight testing and the final demonstration. Deploy residual weapons. Continue evaluation for consideration of a transition to programs of record. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Theater Integrated Planning Subsystem (TIPS)	0.700	0.300	0.300	0.000

Automate and network the current manual processes to produce decision documents to assist in weapons of mass destruction targeting for the theater Combatant Commanders. The user sponsor is U.S. Strategic Command.

- FY 2004 - Migrated nuclear and conventional planning tools to the Theater Planning Response Cells (TPRC) to support a deployable configuration. Initiated crisis action and immediate planning capability. Refined communications links to combat theatres. Conducted MUA demonstrations (including final demonstration) and exercises.

- FY 2005 – Complete final report. Commence interim capability support and extended user evaluation phase
- FY 2006 - Complete interim capability support phase. Complete the ACTD.

FY 2002 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Active Denial System (ADS)	8.600	3.600	3.600	0.000

Demonstrates a breakthrough, non-lethal technology that uses millimeter wave electronic energy to stop, deter, and turn back an advancing adversary from a relatively long range. The user sponsor is U.S. Joint Forces Command.

- FY 2004 - Concept of operations and assessment plan finalized. Human effects testing continuing. System integration and field technical testing completed.
- FY 2005 – Complete human effects testing. Complete military utility assessment (MUA). Optimization of system/operator interfaces, tactics, techniques and procedures accomplished. Residual delivered to transition manager for extended user evaluation.
- FY 2006 - Conclude interim capability support phase. Complete extended user evaluation and assessment. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Agent Defeat Warhead (ADW)	0.800	4.200	0.000	0.000

Demonstrate a high temperature, thermal radiation, incendiary, kinetic energy penetrator warhead to destroy biological and chemical manufacturing and storage facilities. Provide a robust means to neutralize chemical/biological agents while minimizing collateral damage. Efforts are on-going to secure DTRA and service support to develop a robust agent defeat capability for DoD. Lack of counter-WMD mission assignment to a force provider is impeding progress and collaboration on this ACTD. Secured assistance of ATSN/CBRNE in achieving this important capability. The user sponsor is U.S. Central Command.

- FY 2004 – Completed the initial lethality kill rate experiments in order to determine the increase of kill/neutralization of CHEM/BIO agents provided by a unique ACTD fill.
- FY 2005 – Conduct and complete full scale lethality testing with the Defense Threat Reduction Agency (DTRA) and the Air Force Operational Test & Evaluation Center (AFOTEC). Results to be briefed at summer 2005 Oversight Review Group to decide way ahead for the ACTD and pursue full partnership with DTRA and the military services to develop a weaponized agent defeat capability.
- FY 2006 – Develop prototype weapons for operational assessment and demonstration. Conduct flight testing against biological .

and chemical targets with stimulant agent. Complete fabrication of the residual round and commence interim capability support phase. Conduct demonstrations. Complete the ACTD and transition to SD&D phase by a force provider assigned the mission of supplying this capability to the warfighting combatant commands.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Agile Transportation (AT21)	7.000	1.000	0.000	0.000

Demonstrate capability to optimize and schedule all transportation requirements (personnel and equipment) against available lift assets for movement to, from, and within the various theaters of operation; afford continuous visibility into asset management processes; flexibility to address changing and partially defined requirements. Improves quality of service for Joint force and component customers and enables US Transportation Command (USTRANSCOM) to efficiently and effectively manage the assets, infrastructure and resources to support the warfighting commander in a parallel and continuous battlespace. The user sponsor is U.S. Transportation Command.

- FY 2004 – Successfully conducted operator test in USTRANSCOM's Deployment Distribution Operations Center (DDOC) of strategic-level mode determination, business process workflow, shared visualization, and scheduling capabilities using live TPFDD OEF/OIF data for the USCENTCOM Area of Responsibility. Demonstrated shared visualization environment and scheduling/optimization tools as interoperable capability. Demonstrated metrics reporting in support of strategic-level planning and scheduling. DUSD (AS&C) provided additional resources to accelerate and enhance the ACTD due to CoCom requests and potential for greater efficiency in OIF/OEF rotations.
- FY 2005 – Conduct final demonstration and Military Utility Assessment (MUA). MUA participants included USTRANSCOM, U.S. Central Command (USCENTCOM) in Tampa, and USCENTCOM DDOC (CDDOC) in Kuwait. Install and field a residual capability and transition to program of record. Update Transition Plan.
- FY 2006 – Provide interim capability and residual transition support. Potential to complete the ACTD in FY 2006 due to acceleration decision in FY 2004.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Boundary Step (BS)	0.600	0.600	0.000	0.000

Demonstrate tools and techniques for destruction of certain weapons of mass destruction production facilities. The user sponsor is U.S. Special Operations Command.

- Classified content only.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Contamination Avoidance at Seaports of Debarkation (CASPOD)	3.400	1.200	1.200	0.000

Demonstrate contamination avoidance at seaports of debarkation. The user sponsor is U.S. Central Command.

- FY 2004 – Conducted Information Technology/Detector limited utility assessment (LUA) at Dugway Proving Grounds, Utah. Developed SPOD CONOPs. Down-selected technology for the Final Demonstration scheduled.
- FY 2005 - Transition technology and lessons learned. Conduct residual training and support.
- FY 2006 – Conclude the interim capability support phase.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Information Assurance Common Operational Picture (CIA COP)	3.600	3.700	1.800	1.200

Demonstrate detailed information assurance and situational awareness picture of the information system security status of all mission critical systems on a near- or real-time basis in support of Combatant Command and coalition missions. Permits the commander and staff to rapidly assess mission related impacts caused by Information Technology (IT) infrastructure degradation or attack.

- FY 2004 - Developed prototype for Mission Definition, Coalition IT Performance Monitoring, and Incident Management. Demonstrated system with Coalition stakeholders during Joint Warrior Interoperability Demonstration (JWID) 04. Implemented preliminary Threat and Vulnerability portions of IT Risk Monitoring; multi-layered geographical display of units, connectivity, attacks, performance, and impacts; Implement initial coalition collaboration capabilities. Began assessment of commercially available tools for possible technology insertion in lieu of further technology development.
- FY 2005 – Terminate technology development and pursue requirements satisfaction through commercial tools. Refine Coalition IT Performance Monitoring requirements, IT Risk Monitoring, Geographical Display and Coalition Collaboration. Refine CONOPS and TTPs. Plan and support the Military Utility Assessment preparations.
- FY 2006 – Conduct final Military Utility Assessment. Execute Transition Plan to DISA NETOPS, or emerging multinational Information Sharing initiative. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Expendable Unmanned Aerial Vehicle (XUAV)	0.900	0.500	0.000	0.000

Demonstrate covert delivery of off-board sensors, tactical surveillance, battle damage assessments and weapons of mass destruction monitoring without risking personnel. The user sponsor is U.S. Special Operations Command.

- FY 2004 – Continued work on parasail (ALERT) and completed the Military Utility Assessment (MUA). Delivered residual MAKO and TERN UAV systems. Began transition and interim capability support phase. MAKO UAVs developed on this project deployed in support of Operation Iraqi Freedom.
- FY 2005 – Resolve MUA after-action items to assist in rapid transition to operations. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Homeland Security Command and Control (HLS C2)	6.100	3.600	2.400	0.000

Refine and transition technologies and operational concepts that support the Homeland Security and Homeland Defense missions assigned to the Department of Defense. The user sponsor is U.S. Northern Command.

- FY 2004 - Continued development of Homeland Security On Line Services (HOLS) tools, Area Security Operations Command and Control (ASOCC) functionality and expansion of capability to both DoD and civil organizations. Conducted Military Utility Assessment (MUA) in conjunction with Joint Warrior Interoperability Demonstration (JWID) 2004. Employed HOLS and ASOCC for coordination of military security forces under the command of US Northern Command Joint Task Force National Capital Region in the funeral of President Ronald Reagan, dedication of the World War II Memorial., presidential election nomination conventions and G-8 Summit.
- FY 2005 - Continue development of concept of operations in conjunction with US Northern Command in order to optimize currently fielded HOLS and ASOCC capabilities. Expand functionality to participating civil agencies and municipalities including the Department of Homeland Security, US Marshal Service, and Bureau of Alcohol, Tobacco and Firearms. Demonstrate utility and develop concepts of operations to employ current capabilities in conjunction with first responder command and control tools to protect military related critical infrastructure facilities within the continental United States.
- FY2006 – Continue initial operations support to NORTHCOM, PACOM, other COCOMS and selected non-DoD users. Update CONOPS and training based on user feedback, Develop and implement detailed transition plans to programs of record including Net-Centric Enterprise Services, GCCS, and JC2 for AT/FP activities not covered by these programs, work with JROC process to establish requirements and out-year resources.

- FY 2007 – Complete transition activities, conclude interim capability support phase and end the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Hyperspectral Collection and Analysis (HYCAS)	1.600	0.200	0.400	0.000

Demonstrates the utility of a deployable hyperspectral system allowing the end user to utilize intelligence derived from spectral data in a tactical environment while providing the Warfighter with an end-to-end hyperspectral capability. Demonstrates the ability of hyperspectral (HSI) to address critical needs via a calibrated HSI sensor. The user sponsor is U.S. Central Command.

- FY 2004 - Successfully supported the deployment of the Army-COMPASS hyperspectral sensor supporting OIF. Enhanced processing and exploitation algorithms. Began integration of the AF-COMPASS sensor onboard the MQ-1 Predator.
- FY 2005 – Complete integration of the AF-COMPASS sensor onboard MQ-1 Predator. Integrate processing, exploitation and dissemination system in Predator Ground Control Station. Perform the final Joint Military Utility Assessment with AF-COMPASS integrated onto Predator, utilizing a high-altitude hyperspectral sensor on a Proteus aircraft (SPIRITT ATD). Transition tactical hyperspectral sensor system to Aeronautical Systems Center.
- FY 2006 – Continue transition of tactical hyperspectral sensor system to Aeronautical Systems Center. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Distance Support and Response (JDSR)	3.600	2.800	2.400	0.000

Demonstrates and transitions joint, common, interoperable, tele-maintenance environment using a collaborative knowledge center and tool suite, with reach-back capability. JDSR ACTD focuses on timely employment of information, both automated and live, to the different service maintainers. Some of the top level metrics include common collaborative environment, access to multiple subject matter experts, technical information at point of maintenance, interoperable tool suites and auto report generation. Planned transition will be to Distance Support (DS), Joint Aviation Technical Data Integration (JATDI), Integrated Maintenance Data System (IMDS), Third Echelon Test Set (TETS) and Technical Data Distribution (TEDD) programs. The User Sponsor is JFCOM.

- FY 2004 – Completed technical demonstration with low bandwidth collaboration, SME distance training, large file update, help desk support and advanced search capability. Performed operational demonstrations with Marine Corps, Navy, Army and Air Force. Partially deployed JDSR ACTD system tools with the Army Fire Finder Program, Operation Iraqi Freedom (OIF). Supported Army Stryker Program and the Marine Corps I MEF at OIF with JDSR ACTD lessons learned. Conducted

interoperability excursion demonstration between JDSR ACTD and Joint Explosive Ordnance Disposal (JEOD) ACTD. Conducted excursion cross-service demonstration. Initiated Extended User Evaluation of residual packages. Continued development of CONOPs / TTPs, training package and DOTMLPF recommendations. Continued efforts in support of Transition Plan.

- FY 2005 – Continue implementation of the transition strategy including conduct of EUE of residual package and follow-on development, acquisition and fielding. Complete the integration of JDSR ACTD with JEOD ACTD. Continue EUE of residual packages including JDSR / JEOD ACTDs interoperability. Continue development of CONOPs, TTPs, training package and DOTML-PF recommendations. Upgrade common business process with modeling and simulation as needed for establishing joint common maintenance processes based on preliminary EUE results. Continue transition of JDSR products to Program of Records. Initiate fielding of JDSR products.
- FY 2006 – Complete EUE. Finalize CONOPs, TTPs, training package and DOTML-PF recommendations. Continue transition of JDSR products to the POR. Complete JDSR ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Explosive Ordnance Disposal (JEOD)	7.100	0.600	0.600	0.000

Demonstrate a new integrated capability for joint and coalition explosive ordinance disposal forces to meet the evolving, asymmetrical, and sophisticated chemical, biological, radiological, nuclear, and high yield explosive terrorist threats. The user sponsor is U.S. Pacific Command. Metrics include existence of new CONOPS; degree to which in-theater operatives can achieve operational reach-back connectivity to a JEOD MSC ; extent to which connectivity can be achieved to Subject Matter Experts (SME) and web sites; and operational feasibility of CONOPS, TTP, and integrated equipment.

- FY 2004 - Completed Technical Support Center development and transition to Navy support. Continued development of Decision Support System. Completed Technical Evaluation. Conducted operational demonstration and limited military utility assessment for transition of initial operational capability. ACTD used in OIF during operational demonstration and collection data. Completed transition plan integration into Capabilities Development Document for formal acquisition decision.
- FY 2005 – Configure Decision Support System capabilities to operationally and technically integrate JEODNET into the Horizontal Fusion portfolio of systems and users. Conduct final ACTD Operational Demonstration and Military Utility Assessment. Complete Capabilities Production Document to reach LRIP. Final MUA scheduled. Field initial operational capability.
- FY 2006 - Commence interim capability support phase. Transition tools into EOD basic training. Complete final ACTD reports.

- FY 2007 - Complete interim capability support phase and complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Language and Speech Exploitation Resources (LASER)	2.000	0.000	0.000	0.000

Demonstrate technologies, concepts, and architecture paths providing language translation capabilities with improved interoperability, accuracy, deployability and timeliness of translation for speech and document exploitation. Assessments include users within the sponsoring Pacific Command, as well as warfighters in other combatant commands and INSCOM with immediate and critical language translation needs in the Global War On Terrorism. Products from LASER have been deployed for operational use in OIF. The user sponsor is U.S. Pacific Command.

- FY 2004 – Developed interim assessment of military utility for technologies and concept of operations assigned to each Integrated Process Team. Planned and conducted demonstrations in USPACOM's area of responsibility and in other areas of operations. Provided interim language translation tools for assessment in current military operations in Iraq for speech and text communication with Iraqi civil and governmental personnel, as well as interrogation of terrorist forces and exploitation of intercepted documents. Document exploitation tools have already proven useful for intelligence operations involving enemy combatants and hidden weapons caches. Developed transition plan for LASER products found to have utility for military coalition and intelligence users. Facilitated establishment of a machine language translation program and centralized management office.
- FY 2005 - Conduct demonstrations and military utility assessments. Assess opportunities for machine language translation tool residuals in combatant command areas other than the sponsor's area of operations. Complete utility assessments for selected tools and continue demonstration and assessment of other tools for which the user community determines a benefit to additional assessment. Continue fielding interim products for demonstration and extended user evaluations in coalition and intelligence operations. Finalize concepts of operations and tactics, techniques and procedures for user adoption. Conduct capstone demonstrations and final military utility assessment report. Begin implementation of transition plan and joint transition program.
- FY 2006 – Conduct extended user evaluations during the residual phase. Continue modification to CONOPs and procedures for those language translation tools found to have utility. Complete LASER ACTD product transitions, interim capability support phase and end the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Micro Air Vehicle (MAV)	3.400	3.000	1.200	0.000

Provide small, ground combat units with situational awareness of enemy activity using an affordable, responsive, easy-to-operate, backpackable reconnaissance and surveillance system as an organic asset at the platoon level. The final demonstration is planned for Fiscal Year 2006. The Micro Air Vehicle (MAV) will be transitioned in Fiscal Year 2007 by the Program Manager for Tactical Unmanned Air Vehicles. DARPA is the executing agency. U.S. Pacific Command is the user sponsor.

- FY 2004 – Conducted Phase 1: system requirements analysis, as well as the design and build of the air vehicle with a COTS engine. Designed and developed a small, heavy fuel engine. Developed system tactics, techniques and procedures. Conducted critical design review
- FY 2005 – Conduct field evaluations of the Phase 1 development. Complete development and production of a small, heavy fuel engine. Integrate heavy fuel engine and feedback from Phase 1 field evaluations into the Phase 2 MAV system development and production.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Pathfinder	1.000	0.800	0.800	0.000

Pathfinder is integrating a modular system consisting of unmanned sensors and unmanned aerial and ground platforms, display components, and high-bandwidth wireless networks to provide system connectivity to provide real-time reconnaissance and surveillance data for early entry SOF operations. The user sponsor is U.S. Special Operations Command. Metrics include the degree to which small reconnaissance teams can be assisted in emplacement of sensors and deployment of unmanned platforms for collecting information and relaying to inbound assault forces. Effectiveness of ad hoc networking, offset surveillance, fire support coordination, UAV-directed close air support will be assessed.

- FY 2004 – Finalized and integrated COTS and GOTS technology selections. Completed enhancements to the Pathfinder Raven unmanned aerial vehicle (UAV) to include: airframe and avionics refinements; air vehicle miniaturization and weight reduction; improved system performance and survivability; improved battery charging capability; and integration of an optional FalconView (aviator's navigation software) capable laptop. Funded and completed technology enhancements to the Rajant BreadCrumb, a wireless network node, resulting in the SuperCrumb which gives enhanced range, performance, and soldier packaging over the COTS 802.11b system. Developed with BAE a wireless network of acoustic, seismic, and IR sensors. These sensors communicate via low probability of intercept and detection (LPI/LPD) waveforms, and have been packaged for easy deployment by the Soldier. Initiated development of the system user interface with Tactical Geographics. Developed and received first prototype of GCU/2, a half-sized ground control unit for the Pointer and Pathfinder Raven UAVs. Completed three Technical Working Group Assessments of technologies, one Limited Objective Experiment, and the initial Military Utility Assessment

(MUA). Conducted numerous Pathfinder Raven new equipment training sessions (both CONUS and OCONUS) for USSOCOM and US Army troops, including train-the-trainer sessions for the US Army to equip them with ability to conduct their own Army training program. Planned transition of Pathfinder Raven UAV to US Army PM-UAVS (Unmanned Aerial Vehicle Small) via a Wartime Urgent Need Statement and to USSOCOM via a Combat Mission Need Statement. Executed a 250M indefinite quantity, indefinite contract for a small UAV to facilitate quick procurement of systems for users in theater. Planned transition of the SuperCrumb to 3rd Infantry Division via the Rapid Equipping Force, managed by CECOM. Transitioned Raven to both the Army and SOCOM.

- FY 2005 – Complete system integration efforts. Conduct LOEs in preparation for the final MUA. Conduct final MUA. Complete documentation of the initial three years of the program, to include the MUA. Move into residual period and conduct extended user evaluations (EUE).
- FY 2006 – Continue to provide support for the EUE. Complete transition activities and end the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Signals Intelligence (SIGINT) Processing	0.600	0.000	0.600	0.000

Provide a SIGINT processing mode to more precisely identify signals of interest and determine its military utility. The user sponsor is U.S. Pacific Command.

- Classified content only.
- FY 2004 – Performed initial testing.
- FY 2005 – Conduct demonstrations and interim MUA.
- FY 2006 – Complete MUA and final demonstration.
- FY 2007 – Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Space-Based Moving Target Indicator (SBMTI)	6.200	0.600	0.600	0.000

Demonstrate space-based moving target indicator capabilities using existing platform assets. The user sponsor is U.S. Strategic Command.

- Classified content only.
- FY 2004 – Conducted hardware assessment and testing. Conducted field evaluation of software/hardware for determining effectiveness of technology.
- FY 2005 – Conduct initial demonstrations and interim MUA.
- FY 2006 – Complete MUA and final demonstration. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
SPARTAN	3.900	2.400	3.600	4.800

SPARTAN is 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. SPARTAN has three basic operational capabilities objectives: 1. Conduct critical missions (MIW, ISR/FP, PS/ASuW): 2. Prepare the waterspace for Amphibious and Sealift Ops: 3. Provide port-protection when launched/operated from shore. The SPARTAN Critical Operational Issue (COI) is "To what extent do SPARTAN warfighting modules demonstrate a capability as a force leveler and force multiplier against surface and subsurface threats?" SPARTAN has three overarching MOEs: (1) Does the system work; provide capabilities/functionality needed to address the requirements? Does it do what it is supposed to do in each of the warfare areas? (2) Does the system demonstrate a capability as a force leveler and force multiplier against surface and subsurface threats? (3) Can the system be effectively integrated within the force structure? Is it supportable? Is it affordable?

- FY 2004 – SPARTAN deployed to the Arabian Gulf on the USS Gettysburg as part of the Enterprise CSG to support OIF. Spartan demonstrated its abilities as a Force Protection asset. Deployment achieved two years before scheduled. The development team completed development of Spiral 2 ISR/FP and planned Spiral 1 MIW modules for testing and demonstration.
- FY 2005 – Complete development of the Precision Engagement (PE) module, as well as integration and systems testing. Complete the final demonstration and military utility assessment. Conduct demonstration in Singapore. Conduct final MUA. Begin interim capability support phase.
- FY 2006 – Begin Residual and Transition Phase. Support Extended User Evaluations (EUEs). Support Navy program offices in the transition of SPARTAN to a Program of Record (POR) within the Littoral Combat Ship (LCS) Program and for backfit to existing surface ships.
- FY 2007 – Complete transition activities and the interim capability support phase. End the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Thermobarics (TB)	2.200	4.800	2.400	0.000

Demonstrate an energetic, thermobaric, penetrator payload to defeat enemy tunnel facilities and weapons with two-to-three times the lethality of conventional high explosive payloads. The user sponsor is U.S. Pacific Command.

- FY 2004 – Completed operational demonstrations of weapon and planning tool capability. Determined effectiveness of thermobaric fills in field testing scenarios. Produced residual weapons for further testing in SD&D phase or for use in contingencies. Develop weaponized tunnel target defeat fill with increased capability for defeat of these tunnel targets over conventional high explosives.
- FY 2005 – Conduct final demonstration. Deliver 10-20 residual warheads. Conduct user training. Support transition to SD&D phase by providing data to lead service.
- FY 2006 – Conclude transition actions and complete the ACTD.

FY 2003 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Adaptive Joint C4ISR Node (AJCN)	6.200	5.900	0.800	0.800

Develops, integrates, demonstrates and transitions a multi-mission radio frequency system that provides seamless interoperable communications, simultaneously with signal intelligence (SIGINT), electronic warfare (EW), and information operations (IO) capabilities. Some of the top level metrics include number of simultaneous missions and reconfigurable levels of security, mission reconfigurable timelines, and number of scalable architectures and compliant radio transmissions. JFCOM is the User Sponsor.

- FY 2004 Accomplishments – Developed and demonstrated prototype payload functionality in laboratory. Conducted a flight demonstration of prototype payload on an Army C-23 aircraft and performed an Initial Joint Military Utility Assessment (IJMUA). This payload addressed top-level metrics by performing an initial capability in four functional areas (Communications, SIGINT, EW, and IO). Continued coordination of the two-prong approach transition strategy including Extended User Evaluation (EUE) of residual packages, FY06 - 07 and Follow-On Development, Production, Fielding and Sustainment, FY06 and beyond to twelve targeted payload and aircraft programs of record / programs. Continued CONOPS and TTP development. Initiated integration of the payloads final design that will support JMUA and Extended User Evaluation (EUE).
- FY 2005 – Complete integration and testing of payloads and demonstrate functionalities in the laboratory. Install payloads and antennas on the Paul Revere aircraft and two Hunter unmanned aerial vehicle aircraft. Conduct flight tests to verify operation of AJCN ACTD payload and network using CONOPs / TTPs. Conduct a final operational demonstration and perform JMUA. Refine CONOPs / TTPs based on JMUA results. Initiate transition strategy and prepare for EUE.
- FY 2006 – Conduct a EUE exercise. Initiate finalization of CONOPS / TTPs, training package and recommendations for Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF). Transition AJCN ACTD products to programs of record / programs.
- FY 2007 – Complete EUE of AJCN residual package. Finalize CONOPS / TTPs, training package and recommendations for Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF). Transition AJCN ACTD products to programs of record / programs. Complete AJCN ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Counter Bomb/ Counter Bomber (CB2)	4.500	6.000	6.000	2.400

Provides technologies to detect either suicide bombers or command initiated terrorist conventional and non-conventional explosive devices. Objectives include improving force protection of deployed and CONUS-based forces. CB2 was a late FY 2003 new start in reaction to lessons learned during Operation Iraqi Freedom (OIF). The user sponsors are U.S. European Command and U.S. Southern Command. All technology assessments and demonstration results are coordinated and shared with the Joint Improvised Explosive Device Integrated Product Team (Joint IED IPT).

- FY 2004. - Continued technology development and evaluation in conjunction with participating operational sponsors. Conducted initial military demonstration in support of U.S. Southern Command. Completed coordination with U.S. European Command for an FY 2005 demonstration within at a forward deployed operational base. Coordinated with deployed operational forces within Iraq to identify, evaluate and deploy specific counter bomb/counter bomber technologies including improvised explosive device jammers and technologies to identify human carried explosives.
- FY 2005 – Continue to assess and integrate counter bomb/bomber detection tools including intelligence analytical capabilities in support of demonstrations at forward deployed bases within both European Command and Southern Command. Continue technology search and transitions of new capabilities to operationally deployed forces in coordination with other, designated DoD organizations and task forces. These include intelligence tools, wide area explosive detection sensors and portal sensors for monitoring of individuals entering either buildings or compounds.
- FY 2006 - Conduct demonstrations at expeditionary forward operating locations. Prepare MUA reports. Continue transition activities for expeditionary systems.
- FY 2007 - Complete the Extended User Evaluations for specific capabilities identified for transition during the EUCOM and SOUTHCOM operational demonstrations. Transition activities will continue for systems to be deployed at the fixed bases and forward operating locations. Initial systems will be acquired and deployed. Installation and operator training will be provided. Maintenance activities will be established. Tactics, techniques, and procedures will be finalized based on local threat conditions and deployment scenarios.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Deployable Cargo Screening (DCS)	1.100	0.400	1.000	0.000

Provide a deployable capability to detect explosive threats in pallet loads of cargo moving in the defense transportation system. The operational sponsor is U.S. Transportation Command. The Air Mobility Command provides operational manager and acts as customer representative. Transition will be managed through Warner-Robins Air Logistics Center.

- FY 2004 – Developed the demonstration plan. Prepared and assessed concept of operations. Conducted initial testing of proposed system. Initial assessment by customer determined need for an alternative technical approach. Oversight Group met and approved demonstration and assessment of an alternative technology and operational concept. Oversight Group approved extension of demonstration phase to accommodate alternative approach.
- FY 2005 - Perform military utility assessments of the pilot systems and spiral upgrades of sensor systems. Accelerate fielding of interim system for assessment and current operational imperatives. Complete the final demonstration and military utility assessment. Transition lessons learned during extended user evaluation of demonstration systems to objective cargo screening system procurements and fielding. Concepts of Operations, tactics, techniques and procedures also transitioned to Air Mobility Command trans-shipment operations. Perform baseline survey to determine presence of any existing persistent residue of explosives in the trans-shipment environment.
- FY 2006 – Complete the extended user evaluation and the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Foliage Penetration Synthetic Aperture Radar (FOPEN)(FOPEN/SAR)	0.000	1.200	1.100	0.000

Planned to provide real-time detection and cueing of stationary targets obscured by foliage and under camouflage using tactical and national sensors. The user sponsor is U.S. Southern Command.

- FY 2004 – Targeted technologies were returned to the technology base after initiation. Alternate technologies are under examination to meet operational requirements. FY 2003-2004 tests in theater produced promising results.
- FY 2005 – After alternate technologies are identified, reinitiate the ACTD with submission of the Implementation Directive. Begin initial demonstrations.
- FY 2006 – To be determined as part of Implementation Directive development.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Gridlock	4.400	3.900	0.000	0.000

Provide Unified and Joint Task Force Commanders the capability to quickly and automatically tie the time-sensitive advantage of tactical sensors to geospatial coordinate in support of time-sensitive targeting of precision guided munitions. The user sponsor is U.S. Central Command.

- FY 2004 - Achieved accuracy and timeliness goals in Predator and Global Hawk UAVs testing during JEFX 2004 at Nellis AFB. Initiated transition to operations for Predator imagery and Global Hawk Synthetic Aperture Radar (SAR) imagery upon successful achievement of goals.
- FY 2005 - Achieve accuracy and timeliness goals in Global Hawk and U-2 field exercises. Complete transition to support Predator and Global Hawk operations. Continue development of Gridlock capabilities for a host of sensors according to a planned schedule. Provide interim capability to Coalition Air Operations Center (CAOC) and Joint Operations Centers (JOC) at selected Combatant Commander sites. Complete the final demonstration and the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
High Altitude Airship (HAA)	4.500	4.800	4.800	2.400

Provide a prototype, solar powered airship that can fly untethered at 65,000 feet altitude with 4,000 pounds of communication and surveillance payload. The user sponsor is North American Aerospace Defense Command.

- FY 2004 - Completed airship vehicle design. Integrated several subsystems. Performed several subsystem ground tests. Completed payload interface design.
- FY 2005 – Perform a risk reduction phase to improve the skin material, thermal management and power subsystems.
- FY 2006 – Integrate flight vehicle and initiate ground testing. Complete risk assessments. Initiate Military Utility Assessment (MUA).
- FY 2007 - Complete construction of ACTD aircraft. Initiate integrated airship flight-testing with demonstration payload. Perform initial demonstration and MUA.
- FY 2008 – Commence the interim capability support phase.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Joint Blue Force Situational Awareness (JBFSA)	2.800	0.900	0.500	0.000

Develops, demonstrates, and transitions seamless integration of joint blue force situational awareness tracking device information for display on the Global Command and Control (GCCS) family of supported systems. Some of the top level capabilities / metrics supporting the Joint Military Utility Assessment (JMUA) include common operational picture track correlation, dissemination, filtering and manipulation, and interoperability with multiple devices and multiple displays. STRATCOM is the User Sponsor.

- FY 2004 – Conducted a successful operational demonstration and Joint Military Utility Assessment (JMUA) Quicklook by integrating data from ~175 Blue Force Tracking (BFT) devices of 8 different BFT device types into both a US and Coalition Common Operational Picture during Foal Eagle 04 (FE04). Conducted an operational demonstration in Joint Warrior Interoperability Demonstration 04 (JWID04). Leveraged Joint Expeditionary Force Experiment 04 (JEFX04) to gather additional input for the JMUA. Initiated transition of Mission Management Center Testbed(MMCT) capabilities to the Operational MMC located at Army Space and Missile Defense Command Colorado Springs. Continued development of CONOPs, TTPs, and training package based on FE04, JWID04 and JEFX04. Initiated planning to operationalize the solution with JFCOM sponsorship.
- FY 2005 - Initiate execution of transition through Extended User Evaluation(EUE) of residual package in the U.S. Forces Korea(USFK) theater. Operationalize the architecture in cooperation with JFCOM and PEO C4I and Space (Navy). Complete transition of MMCT capabilities to the operational Mission Management Center(MMC). Initiate transition of JBFSA products to targeted programs of record / programs for follow-on development, acquisition and fielding. Continue development and refinement of Concept of Operations(CONOPs), Tactic, Techniques and procedures(TTPs) and training package based on EUE.
- FY 2006 – Complete EUE. Finalize CONOPs, TTPs and training package based on EUE. Continue to operationalize the architecture with the support of JFCOM. Complete JBFSA ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Midnight Stand	2.800	1.200	0.000	0.000

Classified content only.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Night Vision Cave and Urban Assault (NVCUA)	6.300	6.300	1.700	0.800

Provides suite of lightweight, soldier-borne sensor technologies to enable decisive overmatch for dismounted assault in subterranean and urban environments. Products consist of Approach Sensors for long-range surveillance and identification; Cave Assault Kit and Urban Assault Kit for maneuver and target detection; and new Concepts of Operation (CONOPs) / Tactics, Techniques and

Procedures (TTPs) to exploit sensor capabilities. Key Metrics: Target Identification at ranges equal to Detection ranges (Approach Sensors); Human Target Detection at Range of 250m (Cave/Urban Assault). The user sponsor is U.S. Special Operations Command (USSOCOM). ACTD residuals transition to U.S. Army Special Operations Command (USASOC). Products demonstrating military utility will transition to USSOCOM Acquisition Programs of Record. Final Demo occurs FY 2005. ACTD complete FY 2008.

- FY 2004 – Completed technology development of Approach Sensors and Cave Assault Kit. Developed initial CONOPS, TTPs and training packages. Conducted Operational Demonstration I (Cave) with Approach Sensors and Cave Assault Kit. Performed initial MUA. Initiated technology development for the Enhanced Cave Assault Kit and the Urban Assault Kit. Continued transition planning activities.
- FY 2005 - Complete development of Enhanced Cave Assault Kit and Urban Assault Kit. Prepare exercise and evaluation plans for Operational Demonstration II. Refine CONOPs, TTPs and training packages for Demo II based on lessons learned from Demo I. Conduct Operational Demonstration II (Urban). Perform Military Utility Assessment and Measures of Performance (MOPs) and Measures of Effectiveness analysis. Continue preparations for transition to designated acquisition programs.
- FY 2006 - Procure additional residual systems. Field residual systems to USASOC operational units to provide interim capability. Provide residual support. Begin transition to acquisition programs of records.
- FY 2007 – Continue interim capability/ residual support. Complete transition to programs of record.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
OVERWATCH	2.800	4.500	1.200	0.000

Provides an operational sensor and targeting system capable of detecting, classifying and accurately locating direct fire weapons in real-time. This capability for ground forces allows immediate direct precision fire support for infantry operations in land and urban warfare, peacekeeping and peace enforcement missions. The user sponsor is U.S. Pacific Command. Metrics include: percent of firing signatures detected; percent of firing signatures located; overall percent of successful detections resulting in accurate messages; and false target rate and percent of messages garbled or not received.

- FY 2004 – Installed and integrated Overwatch system on HMMWV. Performed Full Scale Test 1 - a limited user test (LUT) to benchmark system performance. Developed/updated classification software based on theater specific target set. Continued CONOPS development using Full Scale Test. Successfully fielded prototype with INSCOM in-theater for operational use. Provided sensor enabling the Gunslinger project of integrating the sensor with a weapon, successful operational evaluation conducted.

- FY 2005 – Perform Major System Demonstration 1 with HMMWV based system. This demonstration will focus on ground forces executing military operations, to include convoy protection, securing designated sectors, and area surveillance. Achieve on-the-move capability for the sensor. Field integrated Gunslinger system with Marines Low Altitude Air Defense unit scheduled for deployment to support OIF.
- FY 2006 - Develop and acquire hardware for UGV-based Overwatch system. Update system software for unattended ground vehicle (UGV) operation. Perform Full Scale Test 2 - a LUT with a Unmanned Ground Vehicle-based system. Conduct final MUA. Transition of the OVERWATCH capability will move to the Night Vision/Reconnaissance, Surveillance, and Target Acquisition program manager.
- FY 2007 – Conduct Extended User Evaluations (EUE) during residual phase. Provide residual system support and maintenance of leave behind systems and perform modifications based on user feedback. Prepare for transition to production. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Tactical Interferometric Synthetic Aperture Radar (IFSAR) Mapping (TIM)	5.700	1.200	1.200	1.200

Provide theater-wide, three-dimensional, fine resolution terrain data and synthetic aperture radar imagery for mission planning and rehearsal data acquisition in joint operations. The Military Utility Assessment will begin in FY 2006, with the residual period running through FY 2008. The user sponsor is U.S. Southern Command. The IFSAR Mapping ACTD will be evaluated based on the following parameters: 1) Demonstrate an ability to collect and disseminate fine resolution HRTI and imagery for country-sized areas in weeks; 2) Demonstration of integration of IFSAR sensor control and data handling hardware/software into the existing MQ-9 Predator-B GCS; 3) Demonstration of data transmission via the RPA SATCOM link; 4) Rapid Dissemination of data within theater of interest and delivery into the NSG; and 5) Tailoring of high-resolution data products to meet user specified requirements.

- FY 2004 - Completed sensor system design. Initiated laboratory testing and validation experiments. Initiated sensor control and data downlink software within ground control station. Identified and refined initial airframe modifications needed for the sensor and supporting ground-based testing. Initiated design of data and process flow.
- FY 2005 - Complete sensor laboratory integration and functional testing; initiate sensor integration into the Remotely Piloted Aircraft (RPA); continue to coordinate development effort with USAF and SOUTHCOM; test and refine sensor control and data downlink software within ground control station; finalize design of data and process flow.
- FY 2006 – Take delivery of RPA; complete sensor integration into the RPA; initiate and complete developmental flight operations. Conduct Military Utility Assessment (MUA).

- FY 2007 – Conduct EUE and continue operational flight testing.
- FY 2008 - Continue EUE and flight testing operations. Conclude theACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Theater Support Vessel (TSV)	5.600	9.100	0.000	0.000

Provide theater commanders a high-speed, intra-theater sealift capability to support all theater engagement requirements within his area of responsibility including operational movement, repositioning and sustainment of combat forces. The user sponsor is U.S. Central Command.

- FY 2004 - Integrated the Enroute Mission Planning and Rehearsal System (EMPRS) capability into both the HSV-X1 and TSV-1X and increased other C4 capabilities of both vessels. Installed Cargo Handling System (CHS I) to include roller floor system and 20T crane and T-Foil (Ride Stabilizer) on TSV-1X; conducted interim assessment. TSV-1X returned to CENTCOM AOR after modifications and assessments completed to participate in OEF. HSV-X1 proceeded to USARPAC; participated in technical and operational exercises/demonstrations. HSV-X1 participated in USFK's RSOI/FE; was tested and proved to extend the Army's ability to employ TSVs in support of Joint operations. Researched CHS II, a potential cargo handling/lift system modification for HSV-X1, which was terminated as not feasible on the current vessel due to associated costs.
- FY 2005 - Demonstrate Radio Frequency (RF)/Infrared (IR)/Laser Warning Receiver (LWR) self-protection capabilities linked to an active deployment system (e.g. the Multi-spectral Softkill System (MASS)). Investigating ability to provide an organic integrated system of systems to detect, classify, and deter/engage asymmetric threats, using both lethal and non-lethal defenses (Spotlights, Acoustic Hailing Devise (AHD), Elector-Optic/Infra-Red (EO/IR) Sensor System, and Remotely Operated Small Arms Mount (ROSUM). Upgrade the C4I suite of the TSV-1X , using Thin Client Technology. Pursuing participation in a Cooperative Development of tactical Electronic Warfare (EW) Situational Awareness to provide full dimension protection, precision targeting, and combat identification with the Australian DoD in conjunction with the U.S.-Australian Joint Exercise, Talisman Sabre. Continue with military exercises (RSOI/Foal Eagle, Cobra Gold, Talisman Sabre, Bright Star 05) and operational and technical assessment . Complete the final demonstration and military utility assessment. Transition lessons learned to Navy for acquisition of objective vessel. Also, transition concepts of operations, tactics, techniques and procedures.
- FY 2006 - Transition to acquisition and end the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Tunnel Target Defeat (TTD)	0.000	0.000	0.000	0.000

Provides the means to defeat underground facilities and the threatening assets they protect. The user sponsor is U.S. Strategic Command.

- FY 2004 - Conducted verification and validation program to numerically verify tunnel response and ground shock, high-fidelity codes against known solutions and to validate the codes against laboratory and field tested data. Finish laboratory tunnel experiments to provide test cases for high-fidelity codes to model tunnel response in jointed limestone media. Performed semi-precision, in-situ field test to provide scaled tunnel response test data on an actual jointed limestone site. Designed nuclear ground shock simulator for full-scale ACTD target facility event to demonstrate tunnel defeat capability.
- FY 2005 - Deliver validated analysis and planning tools for use in pre-shot prediction of the main field demonstration; construct and conduct full-scale ACTD event, a high-explosive simulation test on full-size tunnels in representative geology at the Nevada Test Site. Finish assessment of the end-to-end use of nuclear planning tools to characterize and weaponeer the full-scale ACTD event. Provide residual capabilities to USSTRATCOM. Complete the final demonstration.
- FY 2006 – Complete transition of tools and capabilities to USSTRATCOM and other combatant commands. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Urban Recon (UR)	1.600	1.500	0.300	0.300

Provide advanced airborne and terrestrial 3-D reconnaissance capability to SOCOM (Operational Manager) using LIDAR sensor with rapid processing software and decision aid software. The user sponsor is U.S. Special Operations Command. Metrics include: Extent to which the Urban Recon ACTD sensors and software provide the high-resolution, 3-D data needed to support urban warfare operations; extent to which the equipment and software provided are easy to use and supportable by military personnel; and extent to which the Urban Recon TTPs can be effectively executed in meeting urban reconnaissance objectives.

- FY 2004- Refined prototype designs and completed development of baseline laser sensor hardware and software configurations for vehicle-mounted, soldier-borne, and UAV-mounted configurations. Integrated GPS/IMU (positioning/orientation system) into sensor system configuration. Integrated laser into gimbals for UAV-mounting. Developed UAV control interface to support off-nadir collections. Began the development of remote sensor operation software for UAV. Completed auto-mosaic data fusion software. Completed baseline 3-D Visualization software. Conducted Limited Operational Experiment (LOE) CJTFEX04-2 of surrogate airborne sensor data, vehicle-mounted sensor and 3-D Visualization software package using baseline CONOPS and TTPs. Continued the development of CONOPS, TTPs and training package for warfighter evaluation.

- FY 2005- Upgrade laser to maximum performance based upon commercially available technology. Complete objective laser systems development, supporting vehicle-deployed, soldier-deployed, and UAV-deployed configurations. Complete CONOPS for each objective system configuration. Conduct operational demonstration (JRX05) of vehicle-mounted, soldier-borne, and UAV-mounted laser sensors using established CONOPS and TTPs. Conduct Military Utility Assessment (MUA) of each integrated sensor configuration. Complete development of CONOPS, TTPs and training packages. Conclude transition strategy supporting follow-on development, acquisition and fielding based on successful MUA. Consider using Urban Recon as a JCTD pilot program for transition.
- FY 2006- Provide operational support for residual systems. Complete documentation and provide system training.
- FY 2007 – Conclude interim capability support phase and end the ACTD.

FY 2004 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Tactical Targeting Technology (AT3)	5.000	6.000	4.800	0.000

Develops, integrates, demonstrates and transitions the ability to rapidly identify and geolocate short-time-transmit threat emitters by fighter aircraft equipped with digital upgrades to Radar Warning Receivers (RWR) onboard. Will provide accurate target coordinates for immediate targeting by Suppression of Enemy Air Defense (SEAD) combat aircraft. The user sponsors are U.S. Central, Pacific and European Commands.

- FY 2004 – Conducted initial Software Integration Lab (SIL) testing. Delivered initial ALR-69 with digital upgrades with AT3 insertion. Conducted F-16/RWR interface testing for RF compatibility.
- FY 2005 – Begin initial tower testing with RWR sets to demonstrate Time-Difference-of-Arrival (TDOA) computation rapidly and netted. Conduct first two initial flight demonstrations and interim MUA.
- FY 2006 – Complete demonstration in JEFX 06 and begin integration with NCCT airborne, SIGINT platforms for a fully-developed net-centric battlefield capability against short on-time emitters and double-digit Surface-to-Air Missile (SAM) threats. Complete MUA.
- FY 2007 – Complete final demonstration. Commence interim capability support phase.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Agile Rapid Global Combat Support (ARGCS)	3.000	4.800	4.800	1.900

Demonstrates Integrated Combat Support System technology that will establish a common, interoperable, scalable and morphable capability for electronics weapon systems support. The user sponsor is U.S. Pacific Command.

- FY 2004 – Finalized system requirements. Conducted system integrator competition and awarded contract. Finalized and received approval of Implementation Directive and initiated approval of Management Plan. Worked with U.K. MoD and Spanish MoD as Coalition partners. Initiated industry-led standards activities to formalize ARGCS technologies involving Common Test Interface (CTI), Advanced Test Markup Language (ATML) and Synthetic Instrument (SI) interfaces.
- FY 2005 - Complete fabrication of systems hardware/software. Complete Integrated Assessment Plan.
- FY 2006 – Conduct technical evaluation before deployment on final system hardware and software. Deploy systems and begin Joint Military Utility Assessment (JMUA).
- FY 2007 – Complete JMUA. Begin transition of products. Conduct extended user evaluation.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Reception Staging & Onward Movement (CORSOM)	0.300	0.300	0.100	0.100

Demonstrates a set of technologies, provides modeling and simulation support, and establishes procedures to provide Joint Force Commanders with an enhanced Reception, Staging and Onward-Movement (RSOM) Planning and Execution Monitoring capability for coalition deployment operations. Four-year project under sponsorship of NATO Strategic Commands and Supreme Headquarters Allied Powers, Europe, with completion of development and demonstration by end of CY 2005, transition to NATO and U.S. logistics systems by FY 2007.

The primary metrics to be demonstrated in the ACTD Military Utility Assessment are (1) percent decrease in delays of convoy movements caused by congestion, and as a result decreases in number of units that do not meet Required Delivery Dates, (2) percent decrease in numbers of movement control personnel needed to manage RSOI efficiently, (3) average time to offload strategic movement assets, move assets through marshalling areas, and on to staging areas, (4) comparison of total cost of RSOI when using CORSOM deliverables compared to current costs, (5) identification of reductions in logistics response times, i.e., reduced sustainability requirements, and reductions in losses in supply chain.

- FY 2004 – Determined essential data requirements, and extended RSOM databases where needed to provide a framework for future planning and execution functionality. Completed requirements capture and initial implementation of prototypes for RSOM data exchange and software extensions to NATO and national systems. Installed hardware and software to conduct NATO Radio Frequency Identification (RFID) proof-of-concept trial for tracking NATO consignments on flights into Afghanistan, and

developed links to NATO Movement and Transportation (M&T) systems to enhance in-transit visibility (ITV) in NATO. Conducted laboratory testing and prepared for first validation experiment.

- FY 2005 – Finalization of prototypes and Coalition RSOM Tactics, Techniques and Procedures (TTPs). Provide ITV concept and technology assessment during International Security Assistance Force (ISAF) operations using RFID. Use modeling and simulation to analyze new concepts and doctrines currently under discussion in various NATO M&T forums. Initial military Utility Assessment scheduled for April 05 will demonstrate planning functionality of software. Provide final operational demonstration of CORSOM Tool for RSOM planning and execution monitoring to users in a major coalition exercise. Final ACTD Demonstration date is November 2005.
- FY 2006 – Begin transition to inclusion of CORSOM in the NATO Logistics Functional Area Services of the Bi-Strategic Command Automated Information System, as well as integration in the U.S. GCSS.
- FY 2007 – Complete transition to NATO Logistics Functional Area Services and integration into GCSS and demonstrate capability. CORSOM ACTD scheduled completion date is December 2007.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Shared Intelligence Network Environment (COSINE)	0.200	0.300	0.200	0.200

Implement a flexible secure coalition command, control and intelligence system for sharing and collaboration information to support counter terrorist and combined/joint task force operations. COSINE is sponsored by North Atlantic Treaty Organization Allied Command Operations and Supreme Headquarters Allied Powers, Europe.

- FY 2004 – Developed plan for addressing multi-level security and releasability policy issues. Developed interface with accredited secure network architecture for heterogeneous coalition systems. Developed interface with existing initiative to establish dynamic content-based security system adaptable to changing user security attributes. Conducted preliminary demonstration of Coalition Shared Intelligence Network Environment capabilities using metadata-based publication, dissemination and retrieval rules. Demonstrate COSINE capabilities in the DoD Horizontal Fusion program and Quantum Leap II demonstration.
- FY 2005 – Conduct laboratory trials of interim capability and operational concepts. Test and assess concept of operations and the tactics, techniques and procedures in a broad multinational user environment. Prepare interim military utility assessment of spiral fielded capabilities. Prepare transition plan and Defense Intelligence Agency role in transitioning COSINE ACTD capabilities.

- FY 2006 – Conduct capstone demonstration and military utility assessment. Finalize CONOPS for DoD and coalition operations. Finalize policy modifications and execute transition plan.
- FY 2007 – Oversee extended user evaluation period for the residual capability and concept of operations during the residual period. Modify technologies and procedures as evidenced in extended user evaluation period. Oversee implementation of interconnections of NATO and member nation systems using the COSINE capabilities. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Future Tactical Truck System (FTTS)	4.500	7.200	1.200	0.600

Demonstrates the operational potential, technical feasibility and maturity of advanced vehicle technologies through integrated demonstrations of subsystems, systems, and system of systems. The user sponsor is U.S. Pacific Command.

- FY 2004 - Implementation Directive developed and approved. Draft solicitation for the Modeling & Simulation (M&S) Phase released to industry. Developed and released the Research Announcement (RA) and required attachments for the M&S Phase. RA included specifications for both the Maneuver Sustainment Variant (MSV) and the Utility Variant (UV). M&S Phase Source Selection Evaluation Plan developed and approved. Announcement released for the Tactical Wheeled Vehicle (TWV) Fleet Modernization Technology Rodeo as part of the Expedited Modernization Initiative Procedure. Initiated development of Concept of Operations (CONOPS) and Tactics, Techniques & Procedures (TTPs). Initiated development of the Military Utility Assessment Plan (MUAP). Finalize the Management Plan and completed staffing for approval. Awarded M&S Phase contracts.

- FY 2005 – Continue development of the CONOPS and TTPs. Conduct Technology Rodeo. Conduct an In-Process Review, a Preliminary Design Review (PDR) and a Critical Design Review (CDR) during the M&S Phase. Award contracts (minimum of one each contract for the MSV and the UV) for the Hardware Build Phase. Continue development of the MUAP.

- FY 2006 – Finalize the CONOPS, TTPs and MUAP. Complete build of MSV and UV vehicles. Conduct Safety Assessment for the MSV and UV vehicles. Conduct the Military Utility Assessment (MUA). Conduct the TWV Rodeo in parallel with the MUA. Initiate transition strategy and prepare for extended user evaluation.
- FY 2007 – Begin transition to truck acquisition programs. Complete the ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Precision Airdrop System (JPADS)	0.500	2.800	4.300	1.300

Develops, demonstrates a fast, flexible, direct projection-based distribution system to sustain rapidly deployed forces at any global destination - strategically, operationally, and tactically. The user sponsor is U.S. Joint Forces Command.

- FY 2004 – Refined tactics, techniques and procedures (TTP)/Concept of Operations (CONOPS). Performed prototype design and fabrication. Initiated system integration (Air Force Precision Airdrop System (PADS) with Army Joint Precision Airdrop System (formally PEGASYS)). Successfully demonstrated autonomous flight of two 10Klb decelerator system concepts during technical testing.
- FY 2005 – Complete user prioritization decision on decelerator systems. Complete system integration and continue technical testing. Conduct early user training and evaluation and prepare for Military Utility Assessments (MUA) Scenario #1. Demonstrate a high altitude (25,000 ft. Mean Sea Level), autonomous offset airdrop capability (goal 10-20 miles offset) with the option to deliver separate and distinct payloads (up to 10,000 lbs total, full rigged weight) to multiple locations.
- FY 2006 – Conduct Military Utility Assessments (MUA) #1. Prepare for MUA scenario #2 & #3 and execute. Transition JPADS ACTD technologies to Army and Air Force Transition Managers (PM Force Sustainment Systems (PM FSS) and Air Mobility Command (AMC)) for System Development and Demonstration (SDD).
- FY 2007 – Distribute Military Utility Assessments (MUA) final reports and residual JPADS systems to MUA users. Execute the residual support contracts to support systems. Continue to support and monitor residual system performance and user feedback. Continue to have JPADS Transition Managers (PM Force Sustainment Systems (PM FSS) and Air Mobility Command (AMC)) execute planned System Development and Demonstration (SDD) programs. Complete the JPADS ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Unmanned Systems Common Control (JUSC2)	3.500	4.200	0.600	0.600

Provides a reconfigurable and scaleable common control architecture that provides capability to concurrently manage large numbers of unmanned systems of all types, and applies joint interoperability interfaces for joint service and coalition interoperability of unmanned systems. The user sponsor is U.S. Joint Forces Command. Metrics include: Does the JUSC2 technology enhance the capability of the Joint Task Force to execute its mission; does the use of the JUSC2 technology allow CJTF to make better use of low density- high demand unmanned systems within the JOA; does the JUSC2 technology enhance the JTF Commander's warfighting capabilities; does the JUSC2 technology help the JTF commander maintain better situational

awareness and provide for dynamic re-tasking of assets in support of maneuver elements; and what difference does the technology make; does the JUSC2 system support the interoperability of the Services and the integration of their functions; are the JUSC2 ACTD technologies suitable for employment with the JTF; given the JTF's resources, is the system trainable, deployable and maintainable; can we afford to deploy and use it?

- FY 2004 – Developed joint requirements and preliminary CONOPS, an integrated assessment plan, and a plan for integration of legacy technologies. Completed initial integration of air, undersea, and surface unmanned systems and initiated application of joint interoperability standards to unmanned aerial vehicles.
- FY 2005 – Conduct technical experiments of the common control architecture with a strong focus on UAV interoperability between Army, Air Force, and Navy UAV systems. Conduct user training and preparation for operational demonstrations. Complete integration of unmanned systems of interest.
- FY 2006 - Conduct operational demonstration focused on joint interoperability of unmanned systems. Conduct initial military utility assessment. Complete system integration and testing in preparation for final operational demonstration and assessment.
- FY 2007 – Transition open architecture design and common unmanned vehicle management software to Navy, Army and Air Force.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
MAGNUM	2.500	2.400	1.800	0.000

Classified content only.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Man-Portable Threat Warning System (MANPACK)	4.500	6.000	4.200	0.000

Develops an individual, network-capable, situational threat warning ensemble using an open, plug-and-play architecture, which is user configurable. MANPACK will provide a small, mobile, lightweight intelligence warning package which requires minimal power. The user sponsor is U.S. Special Operations Command.

- FY 2004 – Conducted technology search of existing off-the-shelf capabilities and performed limited integration leading to a baseline MANPACK ensemble. Developed CONOPS and finalized MOEs/MOPs. Developed initial TTPs and took delivery of the Demo I systems. Began user training.
- FY 2005 – Complete first demonstration. Identify early transition opportunities. Take delivery of Demo II systems and continue

user training.

- FY 2006 - Continue final demonstration. Complete joint military utility assessment (JMUA).
- FY 2007 – Complete the ACTD. Commence interim capability support phase.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Multi-Sensor Aerospace/Ground Joint ISR Interoperability Coalition (MAJIIC)	2.500	2.100	2.000	2.000

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. 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. 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. U.S. Joint Forces Command is the operational sponsor and the USAF, AFC2ISRC Langley AFB is lead service.

- FY 2004 - Completed contractor selection and initiate ISR Information Service (ISRIS) design and development. Demonstrated initial ISRIS capability during the Horizontal Fusion Quantum Leap exercise. Developed initial MAJIIC Concept of Operations (CONOPS). Amended the Coalition Surveillance and Reconnaissance (CSR) Memorandum of Understanding (MOU) to include the Netherlands and Spain. Pursued participation in MAJIIC by Australia, Belgium and Turkey. Developed project arrangement and technical arrangement to define participation by the MAJIIC coalition nations: Canada, France, Germany, Italy, the Netherlands, Norway, Spain, the United Kingdom and the United States, and the NATO Consultation, Command and Control Agency (NC3A).

- FY 2005 - Participate in the Horizontal Fusion operational transition/deployment in support of 18th Airborne Corps with servers at DGS-X Langley AFB, VA. Conduct ISRIS laboratory testing and CONOPS validation experimentation to include Coalition nations. Initiate the MAJIIC Project multinational working groups. Expand ISRIS support to additional platform and sensors. Support Coalition test and integration testing with connectivity from DGS-X and NATO C3 Agency.

- FY 2006 - Demonstrate ISRIS capability in U.S. and Coalition environments. Conduct interim Military Utility Assessment (MUA). Expand ISRIS support to additional platform and sensors. Continue MAJIIC Project multinational working group participation. Participate in first coalition live-fly exercise to demonstrate and test interoperability standards.

- FY 2007 - 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.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Protected Landing and Takeoff (PLATO)	0.000	0.000	0.600	0.600

Assist in the development of an affordable Man-Portable Air Defense (MANPAD) countermeasures system that evaluates the use of a ground-based sensor grid in the vicinity of airports. PLATO continues to be delayed pending interagency agreement between the Department of Defense and the Department of Homeland Security on a coordinated strategy of investment for countermeasures to the MANPADS terrorist threat. The user sponsor is U.S. Transportation Command.

- FY 2004 - Prior to the current delay, conducted extensive measurements of infrared (IR) signatures of civil aircraft at a U.S. airport. Data collection will be employed to develop computer generated models of specific type/model and series of commercial aircraft commonly operated by U.S. airlines and also employed by the Department of Defense. Coordinated and shared collected data with the Department of Homeland Security.
- FY 2005 – Pending final approval, conduct hardware in-the-loop missile engagement model development, ground-based sensor development test and evaluation, evaluation of reactive pyrophorics and development of an prototype system to support defense of commercial derivative aircraft employed by the Department of Defense.
- FY 2006 – Perform ground-based sensor grid operational evaluation and leave-behind deployment. Continue sensor fusion flight evaluation/leave-behind deployment. Develop reactive pyrophorics leave-behind assets.
- FY 2007 – Commence interim capability support.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Psychological Operations (PSYOP) Global Reach	2.900	8.000	4.700	2.400

Provide extended range over which the PSYOP message can be delivered. Develop capabilities to disseminate products multi-

dimensionally across extended ranges into denied areas, including over-the-air and new internet based methods. Advance the capabilities of automated planning processes through collaborative technologies, integrated into special operations forces (SOF) planning systems. The operational sponsor is U.S. Special Operations Command.

- FY 2004 - Initiated development/integration of satellite radio, television, and broadcast systems, Unmanned Aerial Vehicle (UAV) based broadcast/relay payloads and the PSYOP mission planning system. Solicited and received proposals for scatterable media products.
- FY 2005 – Perform initial military utility assessment (IMUA) for UAV payloads. Perform IMUA for version 1 of the mission planning system. Begin development/integration of advanced broadcast/relay platforms and scatterable dissemination media. Perform IMUA for first spiral of scatterable media products. Perform demonstration of satellite TV systems. Begin transition of satellite TV capability to warfighter.
- FY 2006 – Perform final MUA for UAV payloads. Perform IMUA for version 2 of the mission planning system. Perform IMUA on spiral 2 of scatterable media products. Demonstrate UAV payloads on the high altitude airship or other similar high altitude platform.
- FY 2007 – Demonstrate scatterable media, advanced broadcast/rebroadcast platforms. Transition initial release of the planning system.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Theater Effects-Based Operations (TEBO)	4.000	5.300	4.800	4.800

The TEBO ACTD will 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 Integrated Mission Architectures. The user sponsor is U.S. Pacific Command.

- FY 2004 - Established EBO baseline for U.S. Forces Korea (USFK). Demonstrated dual language prototype applications and tools for EBO and Operational Net Assessment (ONA) based on U.S. Joint Forces Command (JFCOM) developments. Initiated CONOPS development. Participated in USFK (Ulchi Focus Lens 2004) exercises.
- FY 2005 – Initiate development of EBO action planning tools and visualization tools. Conduct soldier-in-the-loop testing. Conduct initial military utility assessment. Continue CONOPS development. Participate in USFK and JFCOM exercises. Leave second spiral EBO tools with operational USFK planners.

- FY 2006 – Initiate third spiral developments of TEBO tools and CONOPS. Conduct interim military utility assessments. Continue CONOPS development. Participate in USFK and JFCOM exercises. Leave third spiral EBO tools with operational USFK planners.
- FY 2007 – Enhance and integrate course of action planning capabilities and EBO execution enabling capabilities into Combined Forces Center (CFC) architectures (SRL 5). Enhance and transition ONA capabilities into program(s) of record. Enhance and integrate dynamic assessment capabilities into CFC architectures (SRL 6).

FY 2005 ACTDs

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
ACTIONABLE SITUATIONAL AWARENESS PULL (ASAP)	0.000	3.000	1.800	0.600

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) architecture a "Smart Pull" service will be operationally demonstrated and transitioned into NCES and other Programs of Record (POR). The ACTD's top level metrics include increased percentage of useable data available to the user, increased performance through decreased latency of data, percentage of increase in data obtained via "pull" vice "push" procedures, and increased interoperability with coalition forces by use of XML Common Message Format Standards. The User Sponsor of ASAP ACTD is PACOM.

- FY 2005 - Generate Concept of Operations (CONOPS), tactics, techniques and procedures (TTPs) to implement a "Smart Pull" capability by the warfighter. Model and develop the capability and verify through technical and operational demonstrations. Define software specifications and integrate newly developed software into the NCES architecture. Develop a training package and train operational users of the ASAP ACTD software and TTPs in support of operational demonstrations and Interim Joint Military Utility Assessment (IJMUA).
- FY 2006 – Continue development and demonstration software builds around the "Smart pull" capability incorporating feedback from the IJMUA. Add intelligent software agent technology to software builds to help tailor the "Smart pull" capability and an interface to the Command and Control Information Exchange Data Model (C2IEDM) database used by coalition forces. Continue training of operational users prior to conducting operational demonstration and JMUA. Initiate transition of ASAP ACTD products to NCES architecture, User Defined Operational Picture (UDOP), and Integrated Broadcast Service (IBS) programs. Continue development of CONOPs and TTPs.
- FY 2007 – Conduct Extended User Evaluation of ASAP ACTD residual package. Initiate finalization of CONOPs / TTPs, training package and recommendations for Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF). Transition ASAP ACTD products to programs of record / programs.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Coalition Secure Management and Operations System (COSMOS)	0.000	2.250	2.400	2.400

The COSMOS ACTD will do a pilot implementation of the Multilateral Interoperability Programme (MIP) specifications (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. The goal is rapid, secure release and protection of critical C2 information to and among coalition partners on a single and secure integrated coalition network to reduce confusion, uncertainty and delay in combat and crisis operations. The net result will be the bridging of Coalition sourced information with US Global Information Grid (GIG) Network Centric Enterprise Services (NCES) for two-way information exchange.

- FY 2005 – The objectives of the first year are to integrate software products implementing and leveraging the MIP specifications in a testbed environment to initiate investigation, modification and testing of planned COSMOS enhancements. Appropriate demonstration venues, *e.g.*, USPACOM Pacific SimCenter ’05 and USEUCOM Combined Endeavor (CE) ’05, will be selected to show initial capability as well as allow coalition partners to interface their MIP-compliant implementations.
- FY 2006 - The second year will incorporate application exemplars and Community of Interest (COI) interfaces, with further development of COSMOS related capabilities, *e.g.*, cross domain security solutions. Demonstration venues will leverage already planned MIP system level and operational level test events as well as USEUCOM Combined Endeavor ‘06, Coalition Warrior Interoperability Demonstration ’06, Net Centric Capabilities Pilots, USPACOM Pacific Endeavor’06 and other activities.
- FY 2007 – The third year will focus on incorporation of final application exemplars and Communities of Interest (COI) interfaces, complete development of COSMOS related capabilities leading to a Military Utility Assessment (MUA).

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
CBRN Unmanned Ground Reconnaissance (CUGR)	0.000	3.600	3.500	1.700

Demonstrates and transitions a Joint Contaminated Surface Detector (JCSD) into existing mounted CBRN reconnaissance capabilities and demonstrates the military utility of small, CBRN unmanned ground vehicles (CUGV). These enhancements will provide the Joint and Combined Force commanders’ continuous and critical CBRN situational awareness while mitigating the risk to maneuver and supporting forces. U.S. Army Pacific Command (PACOM), in conjunction with the Joint Science and Technology Office for CBD, Joint Program Executive Office for CBD, and Edgewood Chemical and Biological Center will conduct final demonstrations in FY 2006 and FY 2007. PACOM is the CoCom/User Sponsor.

- FY 2005 - Initiate development of Concepts of Operations (CONOPS), Tactics, Techniques, and Procedures (TTPs) and Training Support Packages (TSP). Initiate JCSD prototyping, systems engineering, technical testing and integration. Initiate

CUGV systems engineering and technical testing. Initiate modifications to JSLNBCRS shelter design, fabricate and integrate on HMMWVs. Complete platform modeling and human factors evaluation, and integrate JCSD with CBRN sensors onto CBRN Reconnaissance platform. Develop ACTD Management, Transition and Test Plans. Conduct Market Survey and selection of CBRN detectors and UGV platforms. Identify and obtain CBRN detection suite components. Purchase CBRN sensors and UGV platforms. Develop communication specifications for the CUGV.

- FY 2006 – Continue CONOPS, TTPs, TSPs, and Test Plans development. Complete JCSD test technology and methodology development. Conduct JCSD early user assessment. Complete technical manual and user training prior to the start of the JCSD demonstration. Conduct JCSD demonstration. Conduct early user assessment on dismounted CUGV and initiate system design and integration of modular capability packages. Complete CUGV engineering design tests and system design, test technology and methodology development, and technical manual and user training prior to the start of demonstration. Conduct dismounted CUGV demonstration. Complete dismounted CUGV Test Plan. Complete dismounted CUGV CONOPS development and continue mounted CONOPS development
- FY 2007 – Provide two JCSD equipped CBRN Reconnaissance platforms and JCSD residual support to the 95th Chemical Company (CMLCO) and initiate Extended User Assessment. Conduct robotic platform integration on the third JCSD. Provide two dismounted CUGV residuals to the 95th CMLCO along with residual support and initiate CUGV Extended User Assessment. Complete mounted CUGV system design and integration. Conduct mounted CUGV early user assessment. Complete CUGV test technology and methodology development as well as the technical manual and user training prior to the start of the mounted CUGV demonstration. Conduct mounted CUGV demonstration.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Gunship Standoff Precision Munition (Danger Close CAS – Viper Strike)	0.000	0.000	6.000	6.000

Provides precise (<1meter), simultaneous, multiple target effects with minimal collateral damage over a large (3000km2) area controlled with a digitized battle management system significantly increasing target effects and aircraft survivability.

- FY 2005 Develop prototype launcher system, modify Viper Strike munition with GPS and develop battle management system interfaces. Conduct laboratory simulations and inert munition safe aircraft separation.
- FY 2006 Launch munition from a C-130/surrogate aircraft in a short range engagement and from an AC-130 in a long range engagement against stationary targets. Modify Viper Strike munition with datalink capability and extended life battery.
- FY 2007 Launch munition from an AC-130 in a long range engagement against a moving target then multiple targets. Conduct Military utility assessment and assess and refine CONOPs and TTPs. Conduct extended user evaluation with

residual launchers(2), battle management systems (2) and munitions (20).

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Epidemic Outbreak Surveillance (EOS)	0.000	6.000	7.200	7.200

Epidemic Outbreak Surveillance (EOS) ACTD is a FY05 ACTD that demonstrates and transitions solutions that are transformational dual use for biodefense and operational medicine. EOS is designed to rapidly detect and identify a wide range of pathogens. It is intended to overcome two diagnostic challenges: 1) discrimination between diverse pathogens that present similar (i.e. flu-like) symptoms; and 2) screening rapidly, accurately and simultaneously across multiple (100+) candidate pathogens (including dark horses and zebras). EOS exploits sophisticated micro array-based technology, advanced molecular biology procedures, bio-informatics, and connectivity to provide commanders at all levels the information needed to make time-critical decisions. Ultimately this situational awareness provides a high likelihood that correct diagnostic decisions will be made, even prior to the onset of symptoms. In detect-to-warn and detect-to-treat applications, EOS supports sustainment of warfighter capabilities in biologically hostile domains by promoting earlier and targeted interventions, minimizing casualty losses, and reducing mission degradation. The microbial forensic capability of EOS provides detect-to-act support for commanders as they make decisions related to threat source attribution, for tracking and retribution. DUSD/AS&C, USJFCOM, AF/SGEN and JPEO/CBD are the principals for Development, Assessment/CONOPS and Transition of the required system.

- FY 2005 - Begin planning and hardware procurement. Initiate monitoring of basic military trainees at Lackland AFB, TX for outbreaks of candidate pathogens using level 5 research platforms. Conduct user training. Begin development of CONOPS and TTPS. Plan and conduct technical demonstrations. Introduce protocol optimization and process automation to develop prototype platform for small clinic venues (level III).
- FY 2006 – Continue monitoring military trainees for outbreaks. Refine protocols and collect data for certification of EOS as a diagnostic tool. Continue refinement of CONOPS and TTPs.
- FY 2007 - Continue previous activities and expand demonstrations to Joint arenas to include Carrier Battle Groups, Metro DC (NCR) Metro. Conduct Joint Military Utility Demonstrations.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Enhanced Explosive Resistant Coating (JEERC)	0.000	1.500	1.800	1.500

Explosive Resistant Coating (ERC) is a poly urea material demonstrated to have significant capability to mitigate and reduce damage from explosive blasts. The Joint Enhanced Explosive Resistant Coating (JEERC) ACTD will evaluate the utility of ERC in a wide range of Force Protection scenarios. The ACTD will seek to understand ERC's blast mitigation phenomenology to facilitate better utilization of ERC on a wider range of applications. Areas to be examined are the employment of ERC on vehicles, aircraft, buildings and ships. Central Command is the sponsor and Navy the technical managers. DHS has briefed and been invited to participate coordinating with reps from the UK and Australia for potential coalition partnering.

- FY 2005 - Examine the utility of ERC to provide blast resistance and protection for a wide range of military vehicles. Efforts will include determination of proper formula, application techniques and required performance characteristics against explosive blasts. The primary emphasis in FY-05 will be on vehicle applications with initial evaluation of application of ERC on structures and ships.
- FY 2006 - Continue development of application techniques for vehicles with a greater emphasis on structures and ships.
- FY 2007 - Focus on application of ERC on ships to include new construction vessels (Littoral Combat Ship and High Speed Vessel).

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Coordinated Real-Time Engagement (JCRE)	0.000	2.500	2.700	2.400

The JCRE ACTD will develop the CONOPS and the GIG-enabled software that enables Joint Real-Time Operations and Engagement across multi-Combatant Command (COCOM) Theaters and Echelons. The JCRE ACTD will support Joint and Combined Operations by providing Net-Centric Command and Control Tools that greatly enhance the Planning and Execution across multi-Combatant Commands. These tools will be provided as web services, so they can easily be extended to supporting 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; Multi-COCOM Course of Action (COA) Development Tools; Joint Force Engagement Packages; and Joint Force Synchronization Tools. These JCRE technology components will be implemented using a Service Oriented Architecture (SOA) and distributed orchestration of services. 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.

- FY 2005 - The JCRE will conduct one major demonstration in each year through 2007. These demonstrations will begin with a laboratory demonstration in 2005 and progress to a field exercise in 2007. Demonstration #1. (Fall 2005) Demonstration of Joint

Force Global Situational Awareness Tools and Multi-COCOM COA Development Tools in a laboratory demonstration environment.

- FY 2006 - Demonstration #2. (Fall 2006) Demonstration of Joint Force Global Situational Awareness Tools, Multi-COCOM COA Development Tools, and Joint Force Engagement Packages in a Command Post exercise.
- FY 2007 - Demonstration #3. (Fall 2007) Demonstration of Joint Force Global Situational Awareness Tools, Multi-COCOM COA Development Tools, Joint Force Engagement Packages, and Joint Force Synchronization Tools in a field exercise. A Joint MUA will be performed in conjunction with the final demonstration. Demonstration goals may be changed based on Operational Manager's direction.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Joint Force Projection (JFP)	0.000	0.000	4.500	3.700

Provides the joint warfighter with a suite of functional tools and applications to support joint deployment planning and execution to rapidly provide required force capabilities. Provides a timely, coherent and comprehensive capability to plan, model, analyze, and execute the joint deployment process from an end-to-end perspective.

- FY 2005 - Develop, test, and demonstrate a semantic-language based workflow portal to link together Force Projection activities from initial planning and requirements for capabilities generation, through sourcing, movement, and delivery to the Joint Force Commander. Gain access to authoritative data sources, develop data structures to link capabilities to forces and forces to capabilities, and then provide tracking throughout the deployment process. Focus on integration of existing tools through application of advanced web-technologies. Develop initial concept of operations (CONOPS). Primary metric: 100% Net-centric access to core deployment planning and execution systems.
- FY 2006 – Develop, test, and demonstrate model-based decision support tools to give the Joint Force Commander the ability to be able to conduct rapid, dynamic course of action analysis and predictive assessment of the deployment flow on current operations. Develop, test, and demonstrate a common, joint toolset for Joint Reception, Staging, Onward Movement, and Integration activities to coordinate the flow of forces and sustainment into a theater during execution. Primary metric: Ability to create, manage, and track capability-based force packages and link them to an operational plan (100%).
- FY 2007 – Finalize demonstration activities and delivery of capability into programs of record, primarily Global Combat Control System (GCCS). Primary metric: Crisis Action Planning and Execution (after release of deployment order) Support development and maintenance cycle for Operations Order (OPORD) and associated products. Cycle time reduction from 2 weeks to < 96 hours. Complete JFP ACTD.

ACTD Title	FY 2004	FY2005	FY 2006	FY 2007
Medical Situational Awareness in Theater (MSAT)	0.000	4.000	3.600	1.200

Provide combatant Commanders and Joint Task Force (JTF) commanders timely, complete, actionable health information for operational decision-making. This capability provided by a fusion of medical data, personnel location information and health threat intelligence for situational awareness in theater. The improved timeliness and actionable nature of the medical situational awareness information allows theater commanders to reduce both disease and non-battle injuries, as well as combat casualties, while improving combat effectiveness and responsiveness to emergencies. MSAT user sponsor is the U.S. Pacific Command with the Executive Agent being the Office of the Secretary of Defense, Health Affairs, Director of Deployment Health Support.

- FY 2005 – Refine architecture and identify new and sufficiently mature technologies for possible insertion or integration into the MSAT initial spiral. Develop a spiral model to incrementally grow the architecture while eliminating non-viable alternatives and decreasing risk. Prepare Functional Requirements Document identifying user needs to be addressed by the selected technological capabilities. Final preparation for initial field trial.
- FY 2006 – Conduct field trials of interim spiral capabilities and operational concepts. Demonstrate and assess concept of operations and the tactics, techniques and procedures in a joint exercise.
- FY 2007 – Conduct field trails and integration of spiral upgrades with a full assessment of capabilities, operational concepts and procedures in a capstone demonstration during a joint exercise.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Rapid Airborne Reporting & Exploitation (RARE)	0.000	0.900	1.200	0.400

Permits the production of critical, time sensitive Thermal IR MASINT from the SYERS-2 airborne sensor to meet theater commanders needs for certain types of target detection, identification and characterization.

- FY 2005 – Began coordination of Implementation Directive, of Beta capability for OIF and OEF ahead of ACTD planned timeline, and near real time processing of the full collection capability instead of the 10% in the ACTD.
- FY 2006 – Conduct initial flight demonstrations and interim MUA. Complete MUA and final demonstration.
- FY 2007 – Commence transition of capability support into DODISS certified workbench.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007

Sea Eagle	0.000	1.000	2.000	1.000

Demonstrates and transitions technologies to provide persistent, clandestine, unattended monitoring of maritime, littoral and harbor areas in a Special Operations Forces (SOF) deliverable "system of systems" These funds will be used to support technical downselect, systems integration, and demonstration for the first spiral of the Sea Eagle ACTD and for ongoing technical assessments of sensor and communication technologies for future spirals. The funds will support Johns Hopkins University Applied Physics Lab (the technical integrator for Sea Eagle), Operational Managers support and demonstration costs, and procurement and integration of components for the demonstrations. Systems will be demonstrated when a new capability can be demonstrated to allow an incremental transition strategy. USSOCOM is the CoCom/User Sponsor.

- FY 2005 - Demonstrate an end to end systems solution. Demonstrate a land based electro-optic and infra-red sensor suite, triggered by land based triggers and from a clandestine maritime gateway device. Link land-based equipment together via a close access network. Send the output of the sensors through air via a gateway communications device to a Sea Eagle information handling server at the Mission Support Center (MSC) in Coronado, CA. Link the Sea Eagle server at the MSC to the Global Command and Control System - Maritime (GCCS-M). From the sea, demonstrate a clandestine device, perhaps a buoy, to be used as a multi-media gateway to breach the sea-air interface to communicate a trigger signal to the land based sensors. Additionally, use the gateway to trigger national technical means. Continue technical evaluation of underwater communications technologies. Transition capabilities with military utility.
- FY 2006 – Demonstrate an underwater communications and close access networking capability, and communicate through the clandestine maritime device to land-based systems and/or to the MSC. Demonstrate additional communications alternatives from underwater and from land based sensors to the MSC. Develop CONOPS and TTPS. Transition capabilities with military utility. Evaluate underwater sensors for detecting maritime vessels. Evaluate alternatives for other sensor technologies such as chemical, biological, nuclear, and radiological sensors. Transition capabilities with military utility.
- FY 2007 - For already demonstrated capabilities, iterate and demonstrate a second spiral with enhanced capability. Demonstrate improved networking capability. Demonstrate underwater acoustic sensors to detect and classify maritime vessels, and communicate via underwater close access network through clandestine maritime device with land based sensors and the MSC. Refine CONOPS and TTPs.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Sea Talon	0.000	4.000	2.400	1.200

Is a new concept for using over-the-horizon offboard systems to detect and manage submarine threats in the littorals and for conducting persistent situational awareness in denied littoral approaches to land-based operational areas. Improves the Under Sea Warfare (USW) effectiveness in littoral areas by combining sonar technologies with unmanned undersea vehicles. Will improve the survivability of host platforms by operating at large standoff distances. Metrics include: evaluation of the system against a relevant threat in an environment characterized by water depth, sound velocity profile, clutter and interfering traffic, and sea state; operations demonstrated in passive, active monostatic, bistatic and mulitstatic acoustic modes; over-the-horizon operations will be demonstrated through the use of unmanned airborne data link relays; effective hand-off to weapons delivery platforms; measurement of parameters such as: Probability of detection (Pd), Probability of false alarm (Pfa), Area Search Rate (ASR), Stand-off range, Persistence, Time to detect, Time to classify, Time to Deploy ($T_{d)}$, Time to recover ($T_{r)}$, Situational awareness of countermeasures or spoofing, System vulnerability, Ability to navigate in obstructed waters. Manning requirements or savings will also be evaluated.

- FY 2005 – Will conduct systems engineering design and execute a proof-of-concept demonstration. Continue engineering design based on results. Initiate long lead acquisition for platform components and sensors.
- FY 2006 – Initiate concept of operations planning, continue engineering design and test.
- FY 2007 – Complete engineering design and testing. Conduct Military Utility Assessment (MUA).
- FY 2008 – Transition ACTD platforms to LCS program for EUE.
- FY 2009 – Continue EUE. Conclude ACTD.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
SOF Long Endurance Demonstrator (SLED)	0.000	3.000	6.000	4.800

Demonstrates an unmanned vertical take off and landing vehicle (the A160 Hummingbird VTOL UAV) capable of flying long range (2000+NM/40+ 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.

- FY 2005 - Integration of LIDAR and PSYOP payloads. Development of SIL (Simulated Integration Lab) to speed integration process of other payloads. Begin Hellfire missile system integration. Log resupply payload development.
- FY 2006 - Demonstration of LIDAR payload. Demonstration of PSYOP broadcast payload. Complete Hellfire payload integration and demonstrate the capability. Log resupply payload integration and demonstration.
- FY 2007 – Complete CONOPs development. Develop slide on/slide off payload capability. Perform final MUA. Begin Extended

User Evaluation (EUE).

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Tactical Satellite (TacSat)-2 (Road-Runner)	0.000	2.000	2.800	0.000

Demonstrates use of responsive, flexible and affordable tactical satellites to retain a space capabilities advantage in high threat environments and the concepts for dynamic theater tasking, high-rate theater downlinks and horizontal integration of space derived information via SIPRNET.

- FY 2005 – Build, integrate, launch, and perform on orbit check out and begin operations.
- FY 2006 – Complete MUA and final demonstration.
- FY 2007 – Transition capability to operating command (Air Force Space Command) in support of US STRATCOM.

ACTD Title	FY 2004	FY 2005	FY 2006	FY 2007
Weapon Data Link Network (WDLN)	0.000	5.000	4.800	0.000

The Military Services and Combatant Commanders have numerous standoff weapons programs entering SD&D Phase. Requirements are being identified for a weapon data link capability to enable inflight dynamic re-tasking of the weapons to improve time sensitive targeting and provide a counter-moving target capability. The joint warfighter lacks a currently defined weapons grid with specified standards for information exchange requirements and message sets to facilitate joint interoperability. The WDLN ACTD will define the requirement standards for future weapon data links to enable a fully integrated joint weapons grid where the combatant commanders can fully exploit the capabilities of inherent weapon data links. The residuals of this ACTD will be a defined standard that weapons programs will build to enable the combatant commander to take advantage of a fully integrated weapons grid.

- FY 2005 - Develop network architecture and select a Mil-Std message format that will capitalize on existing joint network standards to provide the earliest benefit to the warfighter, but will not preclude usage of other waveforms or growth to future waveforms. The communication equipment suite would emulate the characteristics of the weapon communicating commands to the weapon control systems and reporting weapon system status and position data to a C2 node after weapon release to insure the weapon can connect successfully to the network and perform its mission.
- FY 2006 - Demonstration of the viability and usability of the network architecture developed during the ACTD effort. The planned approach for the demonstration of the network architecture is to construct a communication equipment suite that will accommodate network enabling hardware and ACTD architecture. Fly a King Air-class aircraft platform carrying a

communication suite for the demonstration. The communication equipment suite will be flown and exercised in a simulated vehicle within Line Of Sight (LOS) and Beyond Line Of Sight (BLOS) network configurations that include a surrogate Combined Air Operations Center (CAOC) and other C2 platforms (possibly a surrogate Forward Air Controller (FAC) using Tactical Air Control Party (TACP) hardware). Conduct the final ACTD operational demonstration and Joint Military Utility Assessment of the Weapon Data Link Network (WDLN) ACTD. Begin implementation of transition strategy.

- FY 2007 – Continue execution of the transition plan. Finalize CONOPs, TTPs and training package. The architecture products, standards established, and lessons learned will flow into current and future networking requirements for weapon programs including JASSM, SDB Increment 2, WCMD-ER, JSOW-C, and EW programs such as MALD-J. Complete the WDLN ACTD.

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

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

D. Acquisition Strategy: N/A

E. Specific funding for each ACTD by fiscal year started *(Dollars in Millions).*

FY 1997 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Chemical Add-On to Biological Detection*	0.000	0.000	0.000	0.000
Consequence Management*	0.000	0.000	0.000	0.000
Counterproliferation II*	0.000	0.000	0.000	0.000
Extending the Littoral Battlespace & JTF Warnet*	0.000	0.000	0.000	0.000
Information Operations Planning Tool*	0.000	0.000	0.000	0.000
Integrated Collection Management*	0.000	0.000	0.000	0.000
Joint Advanced Health and Usage Monitoring System**	0.800	0.000	0.000	0.000
Military Operations in Urban Terrain*	0.000	0.000	0.000	0.000
Rapid Terrain Visualization*	0.000	0.000	0.000	0.000

* Completed

** Completed the demonstration phase of the ACTD.

FY 2000 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
CINC 21*	1.500	0.400	0.000	0.000
Coalition Aerial Surveillance and Reconnaissance	2.900	0.600	0.000	0.000
Communication/Navigation Outage Forecasting System	1.000	0.000	0.000	0.000
Computerized Operational MASINT Weather	0.000	0.000	0.000	0.000
Content-Based Information Security	0.000	0.000	0.000	0.000
Global Monitoring of ISR Space Systems *	.200	0.000	0.000	0.000
Ground-To-Air Passive Surveillance *	0.000	0.000	0.000	0.000
Joint Intelligence, Surveillance and Reconnaissance	0.000	0.000	0.000	0.000
Multiple Link Antenna System *	0.000	0.000	0.000	0.000
Quick Bolt*	0.000	0.000	0.000	0.000
Restoration of Operations*	1.700	0.000	0.000	0.000
Tri-Band Antenna Signal Combiner*	0.000	0.000	0.000	0.000

FY 2001 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Active Network Intrusion Defense	1.700	1.200	0.000	0.000
Adaptive Battlespace Awareness **	1.700	1.100	0.000	0.000
Advanced Tactical Laser	5.600	3.600	1.200	0.000
Advanced Technology Ordnance Surveillance **	0.700	0.700	0.000	0.000
Area Cruise Missile Defense**	0.000	0.000	0.000	0.000
Coalition Combat Identification	5.700	3.000	1.800	0.000
Coalition Theater Logistics **	2.200	0.000	0.000	0.000
Coastal Area Protection System*	0.000	0.000	0.000	0.000
Hunter Standoff Killer Team	6.200	4.200	1.400	0.000
Joint Area Clearance **	1.100	0.000	0.000	0.000
Loitering Electronic Warfare Killer***	0.100	0.000	0.000	0.000
Network-Centric Collaborative Targeting **	5.600	1.800	0.600	0.000
Personnel Recovery Extraction Survivability Aided by Smart Sensors	6.200	0.000	0.000	0.000
Tactical Missile System - Penetrator **	0.600	0.000	0.000	0.000
Theater Integrated Planning Subsystem **	0.700	0.300	0.300	0.000

* Completed

** Completed the demonstration phase of the ACTD

*** This ACTD was concluded in early FY 2004 and returned to the technical base due to technical maturity issues.

FY 2002 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Active Denial System	8.600	3.600	3.600	0.000
Agent Defeat Warhead	0.800	4.200	0.000	0.000
Agile Transportation for the 21st Century (AT21)	7.000	1.000	0.000	0.000
Boundary Step	0.600	0.600	0.000	0.000
Coalition Information Assurance Common Operational Picture	3.600	3.700	1.800	1.200
Contamination Avoidance at Seaports of Debarkation **	3.400	1.200	1.200	0.000
Expendable Unmanned Aerial Vehicle **	0.900	0.500	0.000	0.000
Homeland Security Command and Control **	6.100	3.600	2.400	0.000
Hyperspectral Collection and Analysis	1.600	0.200	0.400	0.000
Joint Distance Support and Response **	3.600	2.800	2.400	0.000
Joint Explosive Ordnance Disposal	7.100	0.600	0.600	0.000
Language and Speech Exploitation Resources	2.000	0.000	0.000	0.000
Micro Air Vehicle	3.400	3.000	1.200	0.000
Pathfinder	1.000	0.800	0.800	0.000
Signals Intelligence Processing	0.600	0.000	0.600	0.000
Space-Based Moving Target Indicator	6.200	0.600	0.600	0.000
SPARTAN	3.900	2.400	3.600	4.800
Thermobarics	2.200	4.800	2.400	0.000

** Completed the demonstration phase of the ACTD

FY 2003 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Adaptive Joint C4ISR Node	6.200	5.900	.800	0.800
Counter Bomb/ Counter Bomber	4.500	6.000	6.000	2.400
Deployable Cargo Screening	1.100	0.400	1.000	0.000
Foliage Penetration Synthetic Aperture Radar	0.000	1.200	1.200	0.000
Gridlock	4.400	3.900	0.000	0.000
High Altitude Airship	4.500	4.800	4.800	2.400
Joint Blue Force Situational Awareness **	2.800	0.900	0.500	0.000
Midnight Stand	2.800	1.200	0.000	0.000
Night Vision Cave and Urban Assault	6.300	6.300	1.700	0.800
Overwatch	2.800	4.500	1.200	0.000
Tactical IFSAR Mapping	5.700	1.200	1.200	1.200
Theater Support Vessel	5.600	9.100	0.000	0.000
Tunnel Target Defeat	0.000	0.000	0.000	0.000
Urban Recon	1.600	1.500	0.300	0.300

** Completed the demonstration phase of the ACTD

FY 2004 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Advanced Tactical Targeting Technology	5.000	6.000	4.800	0.000
Agile Rapid Global Combat Support	3.000	4.800	4.800	1.900
Coalition Reception Staging and Inward Movement	0.300	0.300	0.100	0.100
Coalition Shared Intelligence Network Environment	0.200	0.300	0.200	0.200
Future Tactical Truck System	4.500	7.200	1.200	0.600
Joint Precision Airdrop System	0.500	2.800	4.300	1.300
Joint Unmanned System Common Control	3.500	4.200	0.600	0.600
Man-Portable Threat Warning System	4.500	6.000	4.200	0.000
Multi-Sensor Aerospace/ Ground Joint ISR Interoperability Coalition	2.500	2.100	2.000	2.000
MAGNUM	2.500	2.400	1.800	0.000
Protected Landing and Takeoff	0.000	0.000	0.600	0.600
Psychological Operations Global Reach	2.900	8.000	4.700	2.400
Theater Effects-Based Operations	4.000	5.300	4.800	4.800

FY 2005 ACTDs	FY 2004	FY 2005	FY 2006	FY 2007
Actionable Situational Awareness Pull (ASAP)	0.000	3.000	1.800	0.600
CBRN Unmanned Ground Reconnaissance (CUGR)	0.000	3.600	3.500	1.700
Coalition Secure Management and Operations System (COSMOS)	0.000	2.250	2.400	2.400
Danger Close CAS/AC-130 Standoff PGM Viper	0.000	0.000	6.000	6.000
Epidemic Outbreak Surveillance (EOS)	0.000	6.000	7.200	7.200
Joint Coordinated Real-Time Engagement (JCRE)	0.000	2.500	2.700	2.400
Joint Enhanced Explosion Resistant Coating (JEERC)	0.000	1.538	1.800	1.500
Joint Force Protection (JFP)	0.000	0.000	4.500	3.700
Medical Situational Awareness in Theater (MSAT)	0.000	4.000	3.600	1.200
Rapid airborne Reporting & Exploitation (RARE)	0.000	0.900	1.200	0.400
Sea Eagle	0.000	1.019	2.000	1.000
Sea Talon	0.000	4.000	2.400	1.200
SOCOM Long Endurance Demonstrator (SLED)	0.000	3.000	6.000	4.800
TACSAT-2 Roadrunner	0.000	2.000	2.800	0.000
Weapons Data Link (WDL)	0.000	4.500	4.800	0.000