

RDT&E Budget Item Justification Sheet (R-2a Exhibit)						Date: February 2003		
Appropriation/Budget Activity RDT&E, Defense Wide/BA-3				R-1 Item Nomenclature Advanced Concept Technology Demonstration (ACTD): PE 0603750D8Z				
Cost (\$ in Millions)	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
ACTD/P523	157.762	200.881	213.361	214.183	202.818	205.048	209.775	214.145

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT: The Department of Defense (DoD) recognizes the need to rapidly develop and field new technological capabilities, and to explore innovative and transformational concepts associated with those capabilities. Such advances are critical to the objective of supporting the Chairman's *Joint Vision 2020*. Advanced Concept Technology Demonstrations (ACTDs) are low-to-moderate risk vehicles for pursuing those objectives. ACTDs are capability demonstration and evaluation programs in which the technology and operational concepts are explored in parallel by the military end-users. The demonstrations typically involve a material development organization that tailors the mature technology applications, and a warfighting sponsor that assesses military utility. In addition to stimulating innovation, ACTDs offer three other significant opportunities. They provide experienced combat commanders with an opportunity to develop operational concepts and operational requirements to fully exploit the technologies provided. They allow the users an opportunity to assess the military utility of the proposed capability prior to a major acquisition commitment. They also provide military Services with a mechanism for compressing acquisition cycle time, significantly improving their response to priority operational needs. As such, ACTDs are a key element of the DoD acquisition excellence process. They do not substitute for formal DoD acquisition procedures, but can speed effective operational employment of technologies which are verified by combatant commands to have demonstrated military utility. Since FY 1999, ACTDs also are a key contributor to the Joint Experimentation process under U.S. Joint Forces Command (JFCOM). The Deputy Under Secretary of Defense (Advance Systems and Concepts) (DUSD (AS&C)) works closely with JFCOM on experimental Campaign Plans to insure ACTDs integrate technology and develop new concepts of operation into future joint experiments. ACTDs continue to fill a critical and unique role in addressing joint warfighting requirements. In many cases, ACTDs focus attention on capabilities required by joint commanders that cannot be satisfied by the acquisition investment of a single military service and address joint capabilities not ascribed to a single Service's core military mission.

Ideally, the Military Departments and Defense Agencies provide most of the funding (60-80 percent) for ACTDs. This encourages Service/Agency commitment to the ACTD. Funding from this program element is used: 1) to support actual demonstrations and experimental employment; 2) to provide hardware, software and communications to demonstrate military utility; and 3) to fund transition, interim capability operations and support for up to two years after the operational demonstration phase of the ACTD. This one-to-two-year phase provides the Services, Agencies, and operators with adequate time to continue to address the issues of supportability, maintainability and training identified by the ACTD.

Since program commencement in 1994, DUSD(AS&C) has initiated 115 unclassified ACTDs. Forty-five of these were completed as of the end of Fiscal Year 2002, resulting in 120 distinct products which have evolved as follows: (a) eight entered engineering and manufacturing development; (b) thirty-three have transitioned to acquisition; (c) forty-five have integrated with current operational software systems, such as Global Command and Control System (GCCS) and Global Combat Support System (GCSS); and (d) thirty-six hardware-based solutions have previously been or currently are operationally deployed. Over twenty ACTDs were used during Operation Allied Force, some of which are still actively employed in peacekeeping operations. Subsequently, more than thirty ACTDs are employed in support of Operations Enduring Freedom and Noble Eagle, as well as for Homeland Security operations.

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Science and Technology (S&T) and warfighter communities submit candidate ACTDs for an annual review cycle. The candidates proposed by the S&T community reflect technological opportunities enabled by recently demonstrated technology. The candidates proposed by the warfighter community (Joint Chiefs of Staff (JCS), Unified Combatant Commanders, Military Services and Federal agencies respond to a deficiency in military capability or to an emerging military need. For each candidate, it is necessary to confirm that the proposed concept is based on technology that is sufficiently mature for rapid exploitation, and that the capability addresses a priority military need. Candidates are organized into the *Joint Vision* operational areas of Dominant Maneuver, Precision Engagement, Full Dimensional Protection, Focused Logistics, Network-Centric Warfare (Information Superiority) and Full Spectrum Dominance.

The maturity of the technology and accuracy of costing associated with the proposed capability is assessed by the DUSD (AS&C) with assistance of senior members of the Science and Technology community (known as the Breakfast Club). The Joint Requirements Oversight Council (JROC) validates mission need and establishes the priority of the ACTD candidates by military need. The principal management tools for the ACTD are the Implementation Directive and Management Plan. Each approved ACTD will be described in these top-level documents which provide details of the demonstration/evaluation, the main objectives, approach, critical events, measures of success, transition options, participants, schedule, and funding. The review of the candidates for FY 2003 ACTDs began in January 2002. Sixteen ACTD candidates were recommended and prioritized by the JROC. Based on funding availability, 13 ACTD programs were subsequently selected to begin. Funding for new FY 2003 ACTDs is approximately \$34 million.

The typical timeline of one-to-four years for the operational demonstration phase of an ACTD is compressed compared to normal acquisition timelines for fielding an operational capability. These shorter schedules are made possible because ACTDs incorporate mature or nearly mature technology and, therefore, forgo time-consuming technology development and technical risk reduction activities. At the end of the ACTD, the user sponsor is able to determine if the capability provided by the ACTD technology has sufficient utility to warrant procurement. If there are significant shortcomings, their options are either to pursue an advanced technology demonstration to improve performance, or not pursue the technology any further at this time. In cases where the operational user is satisfied the prototype has significant utility, the prototype can be retained as an interim capability. The Department then moves quickly to enter the formal acquisition process to acquire needed quantities or, if sufficient, to make fully operational those residual assets already produced as demonstration prototypes.

B. PROGRAM ACCOMPLISHMENTS AND PLANS – FY 2002 THROUGH FY 2005:

FY 2002 General Program Accomplishments

Advanced Systems and Concepts initiated two reviews to capture lessons from the ACTD Program's first seven years. The results of an internal audit and an independent expert panel survey confirmed program strengths as a leading source of innovative military capabilities. The panel also highlighted the unique role performed by ACTDs in serving major combatant commanders with tailored, joint capabilities not tasked to Military Services as core mission areas.

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These reviews strengthened the ACTD Program, preparing it for a central role in DoD transformational efforts.

Strong emphasis was placed on linking the ACTD Program to similar efforts in coalition countries. Australia, Canada and the United Kingdom strongly supported this linkage as a means to conserve funding, avoid duplicated projects, enhance interoperability, open new technology options and expand industrial technology bases. Singapore formally joined the SPARTAN ACTD for remotely-piloted surface vessels. France, also, informally pursued ACTD partnerships.

Thirteen ACTDs were completed in Fiscal Year 2002. The Airbase/Port Biological Detection sensors and the Precision Targeting Identification detection and sensor systems transitioned to acquisition. Eighteen ACTD software products were integrated within operational systems, such as four Joint Logistics software tools to the Global Combat Support System. Some ACTD products remained in theater as part of Kosovo peacekeeping operations. Over thirty ACTDs participated in Operations Enduring Freedom and Noble Eagle, as well as Homeland Security operations. For example, Rapid Terrain Visualization ACTD sensors proved invaluable to the Federal Emergency Management Agency, providing detailed, airborne data of the World Trade Center. Seventeen new ACTDs were started in FY 2002 (see specific accomplishments below): Active Denial System, Advanced Notices, Agent Defeat Warhead, Agile Transportation, Coalition Information Assurance Common Operational Picture, Contamination Avoidance at Seaports of Debarkation, Expendable Unmanned Aerial Vehicle, Homeland Security Command and Control, Hyperspectral Collection and Analysis, Joint Distance and Support Response, Joint Explosive Ordnance Disposal, Language and Speech Exploitation Resources, Micro Air Vehicle, Pathfinder, Signals Intelligence Processing, Space-Based Moving Target Indicator, SPARTAN and Thermobarics.

The data call for FY 2003 ACTDs began in the 1st Quarter of Fiscal Year 2002. Twenty-eight ACTD candidates, of the seventy-three received from the Unified Combatant Commands, the Services and Defense agencies, were considered for final selection. Candidates covered a broad range of technologies and needs, including counter-terrorism, force protection, homeland security, logistics, intelligence, reconnaissance, surveillance, information technology, precision engagement, communications and information assurance. These candidates were evaluated for technical maturity by the Breakfast Club and prioritized by each of the Combatant Commands and Services. The JROC then completed final prioritization, validating military requirements for 16 candidates. Based upon funding availability, 13 new ACTDs were selected to start in FY 2003. These ACTDs are Adaptive Joint C4ISR Node, Deployable Cargo Screening, Foliage Penetration Synthetic Aperture Radar, Gridlock, High Altitude Airship, Joint Blue Force Situational Awareness, Midnight Stand (formerly Idaho Thunder), Night Vision Cave and Urban Assault, Overwatch, Tactical Interferometric Synthetic Aperture Radar Mapping, Theater Support Vessel, Tunnel Target Defeat and Urban Recon.

OSD continued the annual process of developing and restructuring the ACTD Program to rapidly address user needs and address issues identified in *Joint Vision*. In FY 2002, the ACTD nomination, screening and validation process was accelerated to permit earlier Service planning for transition of successful ACTDs into acquisition programs. Consistent with this accelerated process, the request for FY 2004 ACTD candidates was issued in July 2002. FY 2002 funds

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were transferred to the executing services/agencies in the amount of \$157.762 million.

The ACTD budget request for FY 2002 totaled \$148.917 million. Congress added \$7.0 million for the Advanced Tactical Laser ACTD and \$3.5 million to pursue a non-ACTD demonstration of Syntroleum technology (Flexible JP-8 Pilot Plant), bringing the total appropriated value of the ACTD program for FY 2002 to \$159.417 million.

FY 2003 General Program Plans

Continue the process of transitioning and initiating ACTDs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Nominations of proposed FY 2004 ACTDs were received in January, with proposal evaluations commencing in February. Funding will continue for active ACTDs initiated in Fiscal Years 1997 through 2002 (\$158.179 million) that have not been completed or transitioned to acquisition programs. Congress added \$3.0 million for the Homeland Security ACTD, plus \$2.8 million and \$2.5 million respectively to pursue non-ACTD demonstrations of the Port Radiation Search and Joint Norwegian ISSP technologies. Funding available for initiating new FY 2003 ACTDs, after subtracting for previous years ACTDs, will be approximately \$34 million. (Total \$200.881 million).

FY 2004 General Program Plans

Continue the process of transitioning and initiating ACTDs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Funding will continue for active ACTDs initiated in Fiscal Years 1998 through 2004 (\$158.611 million) that have not been completed or transitioned to acquisition programs. Funding available for initiating new FY 2004 ACTDs, after subtracting for previous years ACTDs and direct program support, will be approximately \$40 million. (Total \$213.361 million).

ACTD Direct Program Support: The FY 2004 budget has three new budget lines broken-out from the specific ACTDs projects. This funding is used to provide direct program support for the entire ACTD program (vice individual ACTDs). These three budget lines include (1) Unified Combatant Commander; (2) ACTD Pre-Transition Support; and (3) Interagency Classified Projects.

- 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 programs 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 ACTDs that are coalition oriented (within their specific AOR). Due to the critical warfighter role and increased coalition potential, the direct ACTD support is now being formalized within this

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budget submit. FY2004 and FY2005 funding is estimated at \$3.0 million per year for UCC direct program support.

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- 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 has established a goal of increasing the number of ACTDs evolving into formal acquisition programs. In order to enhance this transition effort, the ACTD program has created a pre-transition support line in the budget beginning in FY 2004. The Department will use these resources to help the Services and Defense Agencies “bridge the gap” between the ACTD demonstration and acceptance into the formal acquisition process (e.g., by providing better training tools and address basic interoperability issues). This pre-transition funding also supports the FY 2003 HAC-D recommendation (Report 107-532) to “increase funding for Advanced Concept Technology Demonstrations...to speed up the transition of tools for the warfighter from concept and design to operational prototypes in the field.” FY04 and FY05 funding is estimated at \$3.0 million per year for pre-transition direct program support.
- 3) **Interagency Classified Support for ACTDs:** ACTDs also support a limited number of classified efforts which are detailed in other DoD budget exhibits. FY2004 and FY2005 funding for this direct program support is estimated at \$9.0 million each year.

FY 2005 General Program Plans

Continue the process of transitioning and initiating ACTDs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Funding will continue for active ACTDs initiated in Fiscal Years 1999 through 2005 (\$150.183 million) that have not been completed or transitioned to acquisition programs. Funding available for initiating new FY 2005 ACTDs, after subtracting for previous years ACTDs and direct program support, will be approximately \$45 million. (Total \$214.183 million).

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FY 2002-FY 2005 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 1996. Additionally, section "F" of this exhibit provides a resource summary of the entire ACTD program by ACTD year group.

• FY 1996 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Airbase/Port Biological Detection	0	0	0	0

Provided an interim capability to automatically detect and identify a biological attack on an airbase or port facility. Residual assets are currently deployed in two theater locations.

- **FY 2002** - Concluded the interim capability period and ended the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Logistics	0	0	0	0

Developed interoperable, logistics joint decision support tools (JDSTs) and migrated them to the Global Combat Support System (GCSS).

- **FY 2002** - Concluded the interim capability period and ended the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Tactical High Energy Laser	0	0	0	0

Developed and tested a transportable air defense weapons system demonstrator to counter terrorist attacks on Israel's urban areas by Katyusha rockets.

- **FY 2002** - Concluded the interim capability period and ended the ACTD.

• FY 1997 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Counterproliferation II	0.200	0	0	0

Increased U.S. European Command's precision guided gravity weapons capability and counterforce concept of operations.

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- **FY 2002** - Executed one operational demonstration/military utility assessment (MUA) of AGM-86D Conventional Air-Launched Cruise Missile (CALCM) penetrator against a hardened, simulated chemical production facility using a time delay-only version of the HTSF. Transferred assets to ACC for operational use. Completed Tomahawk Tactical Penetrator Variant (TTPV) critical design review (CDR). Completed sled testing to verify penetration capability. Executed the second Joint Airborne Super-Sonic Missile (JASSM) demonstration against a simulated biological weapons facility. Integrated and tested entire Chemical Combat Assessment System (CCAS) payload on Predator MQ-1 Unmanned Aerial Vehicle (UAV). Successfully completed four FINDER mini-UAV deployments from Predator UAV. Successfully controlled FINDER flight and recovery from Predator Ground Control Station (GCS). Initiated operation and maintenance training and transition planning for CCAS. Completed Integrated Target Planning Tool Set (ITPTS) version 1.0. Accelerated some elements for use in current, real-time operations.
- **FY 2003** - Accomplish remaining CCAS verification testing and training prior to operational demonstration in early FY 2003. Continue preparation for CCAS residual transition and transition to acquisition. Complete Hard Target Smart Fuse (HTSF) sled testing. Complete BLU-116 Advanced Unitary Penetrator (AUP) sled testing and obtain target response data from tests of the AUP against hardened, simulated weapons of mass destruction (WMD) facility. Execute final two ACTD operational demonstrations using a hardened, cut-and-cover simulated chemical production and storage facility and the TTPV, CCAS and ITPTS Version 2 ACTD products. Execute one final operational demonstration of AGM-86D CALCM penetrator against a hardened, simulated chemical production facility using fully functional HTSF. Perform MUAs on the TTPV, CCAS and ITPTS. Produce four CCAS ACTD-residual modification kits. Transition TTPV to engineering and manufacturing development (EMD). Complete the interim capability support phase and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Extending the Littoral Battlespace/ JTF Warnet	14.662	15.400	7.500	0

Demonstrated an enhanced capability to enable rapid employment/maneuver/fire support from the sea of dispersed units operating in extended littoral battlespace. Provide enhanced near real-time situational awareness at all tactical levels of command.

- **FY 2002** - Conducted Warfighter Conferences to develop and identify warfighter and services required capabilities. Initiated translation capability required to enable the common tactical picture. Conducted initial sub-system level testing. Upgraded JTRS surrogate radio based on the lessons learned in the successful KERNEL BLITZ (X) joint exercise in June 2001 to provide a more operational ready capability. Initiated assembly of long range terrestrial communication capability using the TCDL in support of system tests in 1st Quarter FY2003. Initiated development of security certification and accreditation, networking, and routers with the services to provide a unique tactical connectivity at the maneuver level. Initiated development of overarching concept of operations (CONOPS), functional CONOPS, tactics, techniques and procedures (TTPs) and Training Plan. Participated in Millennium Challenge 02, providing an airborne relay capability to a Navy TENCAP Space Based Blue Force Tracking demonstration. ELB provides connectivity between units from commanders to the individual squad level through a Joint Task Force (JTF) Wide Area Relay Network (WARNET) (JTFW). The JTF WARNET uses air and ground relays, and is comprised of a high data rate, point-to-point Tactical Common Data Link and broadcast

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packet radio (VRC-99A). Executed the JTFW Transition Integrated Process and Product Team (IPPT), ensuring continued support of the operational prototype in FY03 and beyond.

- **FY 2003** - Complete ELB / JTFW sub-system level tests in 1st Quarter FY2003 and system level tests in 2nd Quarter FY2003 followed by installation of the Tier 2 and Tier 3 communications, translator, collaboration capability, and system management tools that will provide the horizontal connectivity between the tactical components to enable the common tactical picture. Complete operational personnel training, Hawaii and Japan regional tests and a distributed pre-deployment exercise in preparation for an early FY2004 deployment culminating in COBRA GOLD 04. Complete development of CONOPs, TTPs and training package by operational forces. End the ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Integrated Collection Management	0	0	0	0

Improved management of intelligence collection assets for the joint tactical forces commander including overhead and airborne, signals intelligence and imagery sensors.

- **FY 2002** - Software has been deployed to all of the Regional Unified Combatant Commands. Conclude the interim capability support period to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Advanced Health and Usage Monitoring System	0.900	1.200	0.800	0

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 vendor can be inserted in baseline systems.

- **FY 2002** - Installed Health Usage and Monitoring System (HUMS) on SH-60B squadron aircraft at NAS North Island, California (HSL-41). Conducted flight test verification & developmental testing. Provided aircrew training. Developed Joint Service/Industry health and usage monitoring system cost/benefit analysis model.
- **FY 2003** - Install additional systems and begin operational demonstration on Army UH-60s at Ft. Campbell, KY & Navy SH-60s. Collect operational data for HUMS technology assessment and cost/benefit analysis. Conduct Opens Systems Architecture assessment for the DOD Open Systems Joint Task Force.
- **FY 2004** - Support operational demonstration and interim capability, complete utility assessment.
- **FY 2005** - Transition to acquisition program and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Military Operations in Urban Terrain	0	0	0	0

Evaluated 509 potential technology solutions and field-tested 128 of the most promising to provide urban warfare capabilities. Urban warfare is extremely difficult and requires manpower-intensive operations due to line of sight restrictions, inherent fortification, limited intelligence, densely compact areas, presence of noncombatants, and associated restrictive rules of engagement.

- **FY 2002** - Continued to provide support to residual equipment in the extended user evaluation phase. Collected data for logistics and user acceptance. Continued limited experimentation, focusing on partially met and unmet requirements. Completed documentation. Completed transition activities to end the ACTD.

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• FY 1998 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Adaptive Course of Action	1.200	0	0	0

Demonstrate web-base planning tools to cut initial crisis action response time by 50 percent and allow joint planning by multiple participants curing crisis action planning.

- **FY 2002** - Completed final hardening and transition of the ACOA software to the Global Command and Control System (GCCS). Completed the demonstration phase.
- **FY 2003** - Complete transition of ACOA operations and maintenance responsibilities to Defense Information Systems Agency (DISA) into the Global Command and Control System (GCCS). Conclude interim capability support period to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
C4I for Coalition Warfare	1.500	0	0	0

Developed a modular software package that allows standard U.S. messages to be translated to a NATO standard message format, allowing data to be passed directly between U.S. databases and those of allied countries.

- **FY 2002** - Refocused ACTD in two areas: 1) demonstrated application of NATO Army Tactical Command and Control Information System (ATCCIS) Land Command and Control (C2) Information Exchange Data Model (LC2IEDM) to US forces and weapons systems interoperability. Explored interaction with NATO allies; 2) achieved interoperable exchange of Air Tasking Order and classified email with attachments between US and UK forces in US Central Command theater of responsibility. Transitioned residuals to operational command for use and ended the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Information Assurance: Automated Intrusion Detection Environment	1.200	0	0	0

Developed a means for determining whether hacker attacks are singular events or part of greater information attacks against DoD information systems.

- **FY 2002** - Successfully demonstrated operational usefulness at twelve sites. Transitioned IA:AIDE tools to DISA for life cycle management, implementation and sustainment. Concluded the interim capability support period to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Continuous Strike Environment	2.100	0	0	0

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Reduced the latency associated with correlating command guidance weapons status, targets and airspace deconflictions.

- **FY 2002** - Conducted several military utility assessments in live exercises. Transitioned to relevant Service fire support systems and Joint Targeting Toolkit and provide technical support. Concluded the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Line-of-Sight Anti-Tank	3.600	0	0	0

Developed an anti-tank kinetic energy missile integrated into an expanded capability High-Mobility Multipurpose Wheeled Vehicle.

- **FY 2002** - Conducted final design reviews for fire unit, missile, and training equipment, and began fire unit and missile component fabrication. Conducted component qualification testing, began sub-assembly of components, and prepared for final integration and assembly. Continued weapon system manager and weapon system test-set software code and test, and finalized requirements for missile operational flight software.
- **FY 2003** - Continue fire unit and missile prototype hardware fabrication and assembly. Complete fire unit and missile software system level test and certification. Conduct missile flight tests, and fire unit qualification testing. Conduct limited objective user experiment for air transportability and begin soldier training for force-on-force demonstration to support assessment of military utility.
- **FY 2004** - Complete missile flight tests and fire unit qualification testing. Conduct force-on-force demonstration.

	FY 2002	FY 2003	FY 2004	FY 2005
Migration Defense Intelligence Threat Data System	0.100	0	0	0

Demonstrated advanced intranet capabilities to improve the day-to-day situational awareness and intelligence in support of combating terrorism and force protection operations.

- **FY 2002** - Conducted final military utility assessment of Joint Risk Assessment Management and deployable server. MDITDS has limited long term utility due to cancellation of a major related Intelligence community program. Terminated the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Precision Targeting Identification	0	0	0	0

Demonstrated the military utility of advanced active and passive sensor systems for precision detection and identification of targets from an airborne platform.

- **FY 2002** - Completed negotiations with Ministry of Defense United Kingdom (MoD UK) for Joint US/UK fighter Laser Radar (LADAR) ID program and completed aircraft integration design/fabrication. Conducted utility assessment of the C-130 roll-on/roll-off (RO/RO) system for ANG and completed operational system design. Conducted military utility assessment for the fighter-based LADAR. Initiated operational prototype development of the RO/RO C-130 palletized C4ISR suite. Completed transition activities and end the ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Theater Precision Strike Operations	0	0	0	0

Provided ground component commanders with the automation need to plan and direct counterfire and precision strike operations. Its Automated Deep Operations Coordination System (ADOCS) is currently being used by operational Combatant Commanders.

- **FY 2002** - Supported the Ulchi Focus Lens exercise in Korea. Software is in operational use by over a 1,000 joint warfighters in all of the Regional Unified Combatant Commands. Commence interim capability support period.
- **FY 2003** - Conclude the interim capability support phase to end the ACTD. Transition the capabilities to programs of record.

• FY 1999 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Battle Damage Assessment in the Joint Targeting Toolbox	0.200	0	0	0

Prove a Significant BDA capability by combining battle damage indicators, observed physical damage and inferred functional damage into an accurate assessment of combat operation

- **FY 2002** - Continued development of software architecture, applied additional technology, increased functionality and expanded fielded ground force models/algorithms.
- **FY 2003** - Conclude interim capability support phase to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Coherent Analytical Computing Environment	0.300	0	0	0

Demonstrate advanced data warehousing concepts, on-line analytical processing decision support, and intelligent analytical computing tools to access and utilize joint aviation asset information.

- **FY 2002** - Implemented data warehouse data-mining capabilities to provide source data to the mission-sensitive aircraft resumes. Integrated and updated the CACE tools and provided the tools and training to Marine Air Group (MAG)-13 deployed detachments for extended military utility assessment. Updated Transition Plan(s). Developed initial architecture for analysts and agents which provide command-level decision support. Update Joint Strike Fighter Program Office impact assessment and initiated transition planning.
- **FY 2003** - Determine military utility and complete demonstration of planning and maintenance tools. Develop final architecture report and transition plan(s). Refine the CACE residual tools and end the ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Common Spectral MASINT Exploitation Capability	0	0	0	0

Demonstrate the COSMEC technologies, end-to-end, to an operational user, showing the tactical utility of MASINT spectral analyses to the warfighter.

- **FY 2002** - Continued integration into the Digital Common Ground Station (DCGS) architecture. Concluded the interim capability support period to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Compact Environment Anomaly Sensor II	0	0	0	0

Demonstrate the utility of integrating small sensors onboard a satellite to monitor the space environment.

- **FY 2002** - Conducted user and operational utility assessments.
- **FY 2003** - Conclude interim capability support phase to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Force Medical Protection/Dosimeter	0.400	0	0	0

Demonstrate the technologies and concept of operations of chemical biological agent sampler technology for individuals and small groups.

- **FY 2002** - Completed testing, demonstrations and the Military Utility Assessments for the original three chemical and biological threat samplers. Presented final recommendations for the original technologies and proposed assessment of alternative commercial technology for near-real-time alarming chemical agent sampler. Field and maintain residual capability with operational units. Developed CONOPS for active and passive chemical agent samplers and the biological agent sampler products.
- **FY 2003** - Complete test and evaluation of improved active, alarming chemical threat air sampler. If improved chemical threat sampler has military utility, then field residual products for end user evaluation and end ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Human Intelligence and Counterintelligence Support Tools	0.500	0.200	0	0

Provided mature commercial and government off-the-shelf technology to human intelligence and counterintelligence personnel.

- **FY 2002** - Delivered products to Defense HUMINT Service, appropriate elements of the Services and other customers of ACTD transitions. Finalized Concepts of Operation and Impact Assessments. Supported product participation in exercises and real-world operations.
- **FY 2003** - Complete extended user evaluations and ACTD transitions. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Medical Operations - Telemedicine	1.500	0	0	0

Demonstrate the ability to integrate the services' deployable theater medical telepresence for improved force health protection, reduced force attrition, and minimized medical evacuations.

- **FY 2002** - Began transitioning JMO-T capabilities for the Combatant Commanders or designated component surgeon in accordance with selected deployment strategy; inserted available Theater Medical Information Program (TMIP) capabilities to replace JMO-T placeholder capabilities; and implemented operations support systems. Refined logistical support concepts and operational Tactics, Techniques and Procedures (TTP); finalized transition documentation; completed extended user evaluation and final MUA including findings from the extended user evaluations. Ended the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Theater Logistics	0	0	0	0

Produce and transition advanced logistic and operational planning and execution capabilities using web-based planning tools to the warfighter.

- **FY 2002** - Provided the warfighter with near real-time operations and logistic collaborative capabilities to support planning and execution. Incorporated technologies that will track planned versus actual movements, and assess logistic readiness, selected weapons systems, and classes of supply. Developed and demonstrated a watchboard capability to track and report operational and logistics status of current operations through a web-based framework. Integrated watchboard and common operational picture views to provide logistic overlays for the warfighter. Demonstrated JTL's multi-echelon interoperability and in-theater management capabilities in a military utility assessment. Finalized transition plan to transfer JTL ACTD residual products (software, source code, training materials, and hardware) to GCSS through Defense Information Systems Agency (DISA) Advanced Information Technology Systems – Joint Program Office (AITS-JPO).
- **FY 2003** - Commence pilot services at DISA AITS-JPO. Residual products (software, source code, training materials, and limited hardware) will be transferred to the DISA AITS-JPO, for transition by DISA to GCSS. End the ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Theater Air and Missile Defense Interoperability	1.700	0.500	0	0

Integrated separate Navy and Army air defense systems allowing them to exchange target track information to achieve an integrated air defense picture..

- **FY 2002** - Reported military utility assessment of the engage-on-remote aspects. Finished fabrication and installation of limited single integrated air-picture capability.
- **FY 2003** - Conclude interim capability support phase to end the ACTD.

• FY 2000 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Coalition Aerial Surveillance and Reconnaissance	4.700	2.100	3.000	0.600

Develop a concept of operations and tactics, techniques and procedures for coalition employment of moving target indicators and synthetic aperture radar operations .

- **FY 2002** - Conducted a military utility assessment in a live-fly European exercise and produce measures of performance/effectiveness analysis. Began insertion of CAESAR functionality into participating country's ground stations. Produced and transitioned Concept of Operations and tactics, techniques and procedures to participating nations and SHAPE.
- **FY 2003** - Conduct a military utility assessment in a live-fly exercise and produce measures of performance/effectiveness analysis. Begin 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)).
- **FY 2004** - Continue 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, MOEs, MOPs) and; architecture and design (interfaces, ICDs and Standard NATO Agreements (STANAGs)).
- **FY 2005** - Conduct final live-fly exercise in US and utility assessments. Conclude interim capability support phase to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005

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CINC 21	10.200	5.200	1.600	0.400
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Develop, demonstrate, assess and transition the concept of operations, hardware and software necessary to provide a theater Combatant Commands with a C2 environment that addresses improved situational awareness and decision making tools across multiple simultaneous Crisis Operations and Theater Engagement activities.

- **FY 2002** - Demonstrated in Tempo Brave exercise a highly visual, dynamically updated capability to develop and understand the Combatant Commander's theater situation, plans, and execution status during multiple, simultaneous crises involving joint, coalition, and humanitarian agencies based on shared knowledge and collaboration across secure and optimized networks. Delivered final development spiral to the implementation and operational teams for verification, validation and military utility assessment.
- **FY 2003** - Conduct Military Utility Assessment during Terminal Fury 03 at PACOM. Conduct Extended User Evaluation of residual capability at PACOM and STRATCOM. Continue to work transition to next-generation of GCCS and DJC2. Continue development of CONOPS, TTPs to mesh with standing joint force headquarters (SJFHQ) evolving concepts and development of training package. Ensure decision-focused C2 capability supports all Combatant Commands and work scalability and software refresh issues.
- **FY 2004** - Complete Extended User Evaluation at Pacific Command (PACOM) and Strategic Command (STRATCOM). Complete computer-based training, CONOPS, TTPs, and transition. Ensure software refresh and functionality. Transition capability to next-generation GCCS and/or deployable joint command and control (DJC2). End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Communication/Navigation Outage Forecasting System	0.300	0.900	0.500	0

Predict the satellite space environment and alert control operators to place satellites in protective mode when disturbed, ionospheric conditions are likely.

- **FY 2002** - Constructed satellite sensors and integrated system. Performed assessment and user evaluation of Scintillation Network Decision Aid (SCINDA).
- **FY 2003** - Conduct payload test, spacecraft integration and launch vehicle integration. Continue Scintillation Network Decision Aid (SCINDA) assessments and user evaluation.
- **FY 2004** - Launch spacecraft, conduct on-orbit checkout, enter survey and forecasting modes with limited operational use. Continue Scintillation Network Decision Aid (SCINDA) assessments and user evaluation.
- **FY 2005** - Continue survey and forecasting modes, perform extended user evaluation.

	FY 2002	FY 2003	FY 2004	FY 2005
Computerized Operational MASINT Weather	1.300	1.300	0	0

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Provide near real-time cloud pictures for high-value targeting support, using existing national assets with a foundation to exploit future systems.

- **FY 2002** - Began dissemination architecture for dissemination of data to theater. Integrated validated algorithms into infrastructure. Validated products/CONOPS for use of products for warfighter support. Demonstrated capability to operational user and refine products/CONOPS. Develop initial set of future sensor requirements.
- **FY 2003** – Complete dissemination architecture for rapid dissemination of data to theater. Implement suggested improvements to algorithms as a result of operational demos in FY2002/2003. Formal MUA. Produce/coordinate CONOPS and future sensor requirements with appropriate parties.
- **FY 2004** – Coordinate CONOPS and future sensor requirements with other commands. Operations and maintenance for ACTD infrastructure developed. End the ACTD.

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	FY 2002	FY 2003	FY 2004	FY 2005
Content-Based Information Security	0.200	0	0	0

Demonstrate a multi-level security solution that can support joint, coalition, and interagency operations

- **FY 2002** - Transitioned technical management from Navy Space Warfare (SPAWAR) to National Security Agency (NSA) and moved from "proof of concept" ACTD to providing a certified product. The Principal Assistant Secretary of Defense for C3I (PASD/C3I) approved accelerated timeline and provided funding to NSA for production of a certified system as a result of increased priority consequent to the events on 11 September 2001. Coordinate contract award.
- **FY 2003** - Continue contracting efforts to develop a Type 1 cryptographic device prototype. Continue systems and security engineering. Begin prototyping, certification and incremental product delivery. Plan for FY2004 initial operating capability and FY05 transition to NSA product line.
- **FY 2004** - Continue module development for incremental delivery of certified Type 1 multi-security enclave encryption device for joint, interagency and coalition application. Conduct military utility assessment in conjunction with Coalition exercise and Standing Joint Force Headquarters prototype testing. Prepare for transition of certified devices to NSA product line and DISA implementation on DoD and Coalition networks.
- **FY 2005** - Finalize transition to NSA initial operating capability product line and DISA implementation. Commence delivery of certified Type 1 multi-security enclave encryption devices to Regional Combatant Commanders for use in joint, interagency and coalition networks. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Global Monitoring of ISR Space Systems	0.300	0.300	0.200	0

Demonstrate the value of providing near-real-time information on potential threats to theater operations posed by commercial space systems.

- **FY 2002** - Demonstrated capability with deployed assets continued with limited operational use.
- **FY 2003** - Complete system development and demonstrate military utility of interim system.
- **FY 2004** - Complete demonstration of the military utility of the interim system. Continue limited operations. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Intelligence, Surveillance and Reconnaissance	2.400	0	0	0

Provide the Joint Force and Early Entry Force commanders the ability to integrate tactical reconnaissance and tactical operational sensors to improve situational awareness.

- **FY 2002** - Demonstrated baseline solution (based upon user defined TTP/CONOPS) at Lucky Sentinel 02, Marine Expeditionary Force Exercises (MEFEX) and brigade-level venues. Selected, integrated, and conducted end-to-end demonstration of non-traditional sensor feed(s). Provided modeling and

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simulation support to Lucky Sentinel 02, Marine Expeditionary Force Exercise (MEFEX) and brigade-level venues. At request of USCENTCOM, deployed to support current, real-time operations.

- **FY 2003** - Refine and Enhance JISR interfaces to source systems based upon user defined TTP/CONOPS (Lucky Sentinel 03, MEFEX 03, Ulchi Focus Lens 03). Integrate fielded JISR prototype into Army Brigade evaluation. Continue working relationships with PM IF and other program offices to include TES/NFN, Joint Digital Fires Network and Digital Common Ground Station - A (DCGS-A) to demonstrate JISR added value. Plan and execute additional formal assessment by Joint Interoperability Test Center (JITC), Joint Command, Control, Communication, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Battle Center and warfighter assessments by CENTCOM and I MEF.
- **FY 2004** - Complete final assessment of military utility, operational effectiveness, suitability, and interoperability during demonstration. Interoperability reviews will include Defense Information Infrastructure/ Common Operating Environment (DII/COE) certification from appropriate certification authorities to include DISA. Transition Memoranda of Agreement will be accomplished with proposed programs executive officer's (PEO's) with responsibilities for programs of record. Review and approval of final methodology and assessment plan by the Council of Colonels prior to execution of the demonstration.
- **FY 2005** - Complete sustainment support to respective service and joint C4ISR user warfighters of the JISR product delivered in FY2004. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Ground-To-Air Passive Surveillance	1.800	1.200	0	0

Evaluate passive surveillance systems for counterdrug operations.

- **FY 2002** – Conducted initial assessments of passive surveillance systems for counter drug /force protection applications; specifically, passive coherent location for airborne targets. Successfully conducted the first field demonstration of the Silent Sentry 3 (SS3) at Naval Air Warfare Center NAWC-AD, Patuxent River, Maryland, during May 30 to June 14. SS3 is an operationally sized, real time implementation of this technology. Passive tracking of aircraft in excess of 50 nautical miles was demonstrated by SS3 with some tracking of commercial aircraft as far north as Reagan National Airport observed on the screen (70 nautical miles). Successfully conducted field demonstrations at Naval Amphibious Base, Little Creek, Virginia, during August 14 to 23. The SS3 system was integrated into the Distributed Surveillance Sensor (DSS) system to provide the passive air surveillance picture as part of a base protection demonstration for the Commander Navy Region Mid Atlantic. Government and military personnel were trained on the operation of the system for initial MUA training. These successful demonstrations have done much to quiet criticism of this technology by the established radar technical and operational community and to increase work being done in the Passive Radar area. Implemented innovative “lease/option to buy” contract as path to acquire an SS3 for continued validation, MUA testing, and residual system..
- **FY 2003** - Exercise the delta cost purchase option of the “lease/option to buy contract” to acquire residual system to allow independent government demonstration, testing, and MUA to proceed within budget established. Assess corrections to minor problems discovered during previous demonstrations and tests. Complete MUA of passive coherent location (PCL) technology. The assessment includes operational user training and support. Maximum use of

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Joint exercises and tests will be used as part of the operational assessment of the SS3. These may include Roving Sands/JCIET 2003, FBE-K 2003, and Limited Objective Experiments (LOE). Complete planning to insure successful transition of the GAPS ACTD to the user. This includes assessments of the reliability, maintainability, and availability of the system to determine/verify the level and type of support required for the operational SS3. This will be used to assess the life cycle costs of the SS3. Provide final assessment reports and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Multiple Link Antenna System	1.500	3.700	0	0

Provide two-way communications with four different platforms simultaneously while on the move using a single antenna.

- **FY 2002** - Completed design of antenna control system software. Completed design, fabrication, integration, and lab tests of MLAS demonstration system. Refocused ACTD from Navy UAV to Army airborne network centric command and control. Initiated MLAS demonstration in lab and field environments for Army sponsor. . Refine options for transition to acquisition.
- **FY 2003** - Complete proof of concept demonstration. Refine and update antenna application to operational concepts, CONOPS and network procedures. Pursue follow-on Joint Warfighter Exercise opportunities with Army and US Pacific Command/Commander THIRD Fleet. Prepare for transition to acquisition. Prepare demonstration analysis and findings and deliver final demonstration reports. Explore extended user evaluation opportunities.
- **FY 2004** - Conduct extended user evaluation and further CONOPS development depending on results of FY2003 military utility assessment. Prepare MLAS transition to acquisition. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Quick Bolt	7.700	6.200	0	0

Integrate five different guidance technologies into the High-Speed Anti radiation Missile (HARM) used to destroy mobile enemy radar systems that can threaten friendly systems.

- **FY 2002** - Commenced lab and field test demonstrations of a fully integrated Quick Bolt system.
- **FY 2003** - Complete captive and live-fire flight testing.
- **FY 2004** - Commence interim capability support phase.
- **FY 2005** - Conclude interim capability support phase and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Restoration of Operations	3.200	1.900	1.700	0

Demonstrate the tools required to prepare for and immediately react to a chemical and biological (CB) weapon attack against a combatant commander-identified

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port, airfield or logistics facility.

- **FY 2002** - Conducted five technical demonstrations, at Osan Airbase, Korea and Dugway Proving Grounds, Utah, and performed initial military utility assessment. Continued user training and limited system functional tests. Revised concept of operations. Conducted final technology selection.
- **FY 2003** - Conduct final demonstrations and utility assessments. Enhance RestOps capabilities from the baseline systems and based on findings from preliminary demonstrations.
- **FY 2004** - Transition technology and lessons learned. Conduct residual training and support.
- **FY 2005** - Conclude interim capability support phase to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Tri-Band Antenna Signal Combiner	0	0	0	0

Provide increased information flow for a lighter more mobile force to meet immediate military needs.

- **FY 2002** - Tri-Band Antenna Signal Combiner: Completed demonstration preparations and commenced transition to acquisition activities, in anticipation of postponed Military Utility Assessment (due critical component diversion to Operation Enduring Freedom.)
- **FY 2003** – Complete Military Utility Assessment. Transition interim capability support to acquisition to end the ACTD.

• FY 2001 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Active Network Intrusion Defense	1.800	2.000	1.800	1.200

Demonstrate a capability to respond in real time to network intrusions by making changes to network devices like routers, firewall, intrusions sensors and etc.

- **FY 2002** - Continued gathering user requirements and conducting trade study of potential technologies. Refined collection, correlation, and notification agents and collaborative interfaces. Created an open database schema for computer network based events and incidents. Integrated dynamic visualization and correlation displays. Provided automated support to convene experts, information, recommend courses of action, and to build rapid coordinated responses via distributed "virtual" teams.
- **FY 2003** - Transition Operational Manager responsibility from US Space Command to US Strategic Command. Demonstrate and assess for military utility the collection, correlation, and notification capabilities of the agents; the collaborative interfaces; the automated capability to convene a distributed "virtual" team; and, a rapid coordinated response capability. Demonstrate local environment and enterprise wide correlation, analysis and visualization capabilities, and local automated response interfaces.
- **FY 2004** - Complete final report on military utility. Complete CONOPS, Tactics, Techniques and Procedures development and documentation. Sustain in

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place assets for those participants in the limited operational experiments. Continue to obtain operational user feedback.

- **FY 2005** -. Transition software tools and modules to life cycle sustainment and management. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Adaptive Battlespace Awareness	3.100	3.200	1.600	1.000

Demonstrate the potential of the Global Command and Control System (GCCS) Common Operating Picture (COP) to provide relevant information to support Combatant Commanders.

- **FY 2002** - Developed necessary intelligence/operational interfaces and the supporting mission-specific, user-tailorable templates required to facilitate the display of information relevant to the task or area of interest. Demonstrated these capabilities in a spiral upgrade demonstrations to the user sponsor.
- **FY 2003** - Develop task-driven, automated, relevance-based information profiles for smart "push/pull" relevance-based dissemination in time-critical decision making. Demonstrate further enhancements in EUCOM area of responsibility. Evaluate spiral upgrade assessment by extended user evaluation sites. Perform final military utility assessment and integration plan for GCCS-I3.
- **FY 2004** - Integrate 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. Begin implementation of transition plan. Review ABA adoption by other combatant commander areas.
- **FY 2005** - Prepare final military utility assessment, incorporating extended user evaluations of residuals. Finalize concept of operations. Execute plan for transitioning ABA into GCCS-I3. End ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Advanced Tactical Laser	11.800	6.200	6.011	1.200

Integrate a moderate power laser, uncoiled optics, and existing fire-control systems onboard a V-22, H-53 environment.

- **FY 2002** - Developed the Systems Engineering Management Plan (SEMP) and the Integrated Technical and Management Plan (ITAMP). These documents set the programmatic baseline for the ATL ACTD. Initiated analysis and testing which will lead to an FY2003 System Baseline Review (SBR). The SBR preparation consists of design experiments, modeling and simulation and design analysis/trade studies.
- **FY 2003** - Continue the development of the ATL ACTD system. Effort at the start of the fiscal year will focus on completion of the SBR, scheduled for Dec 02. The SBR will establish the technical baseline for the ATL system, allowing us to allocate performance requirements and system integration constraints to the various ATL ACTD system components. Begin design of the system hardware for the Laser device (i.e. fluid supply system, resonator cavity and optics, energy flow path elements), surveillance and beam control (i.e. acquisition system, laser beam turret, beam control mirrors and sensors and software) and the hardware/software for the operator workstation. In the fourth quarter, conduct a Preliminary Design Review (PDR) of the ATL hardware and software. The PDR is an intermediate review to verify that the subsystem components and requirements allocations will allow the ATL

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system to continue to meet program objectives. Extensive work will be accomplished to analyze and assess the ATL system lethality vs. the design reference mission targets. Materials testing and analysis will be accomplished.

- **FY 2004** - Complete the design and begin the build-up of the Advanced Tactical Laser ACTD system. Accomplish the subsystem and system Critical Design Reviews (CDRs), the final reviews of the system component designs before assembly and check out. Procure long-lead components and begin acquisition and delivery of ATL ACTD system hardware and software. Begin the Military Utility Assessment (MUA) using ATL simulations and component hardware testing in conjunction with military exercises.
- **FY 2005** – Complete the MUA. Finalize transition activities and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Advanced Technology Ordnance Surveillance	1.200	0.800	0.700	0.800

Demonstrate a small hybrid integrated circuit chip incorporating the most recent industry advances in miniaturized electronics technology.

- **FY 2002** - Developed the integrated radio frequency identification (RFID) and micro-electro-mechanical systems (MEMS) system. Conducted system and component testing.
- **FY 2003** - Produce 1,000 tags, with associated readers, for operational demonstrations and military utility assessments.
- **FY 2004** - Provide residuals to EUCOM for use in exercises. Maintain residual capability at NSWC, Indian Head Division. Begin transition to Navy.
- **FY 2005** - Continue Navy transition. Commence Army and Air Force transition.

	FY 2002	FY 2003	FY 2004	FY 2005
Area Cruise Missile Defense	2.800	2.000	0	0

Provides surge response to cruise missile attacks by integrating sensors and force response through North American Air Defense Command channels.

- **FY 2002** - Conducted ‘Cruise Missile Prosecution’ Demonstration #2 in conjunction with the JSCIET 02 Exercise. Exercised the entire cruise missile kill chain of events (find-fix-track-target-engage-assess). Completed Joint-Based Expeditionary Command and Control (JBECC) CONOPs refinement. Commenced tactics, techniques and procedures development and JBECC deployment planning.
- **FY 2003** - Conduct the JBECC – Rapid Deployment Demonstration (#3). Serves as the military utility assessment (MUA) venue. Demonstrate JBECC capability to deploy and provide an integrated air picture to a NORAD air defense sector anywhere within the CONUS. Commence transition and sustainment of residual capability. Develop operator and maintenance training program.
- **FY 2004** - Complete transition and conclude interim capability support phase. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005

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Coalition Combat Identification	0.000	5.600	4.600	3.100
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Demonstrate and transition hardware and software providing situation awareness, “blue force” tracking interoperability systems, target identification systems, modeling and simulation, joint training,, requirements and architecture definition, CONOPS, doctrine and techniques, tactics, and procedures for a combat identification capability across joint, allied, and coalition operations.

- **FY 2002** - Continued Single Channel, Ground-to-Air Radio System (SINCGARS)-Based Combat Identification (SBCI) radio software upgrades for U.S. and exportable radios. Continued development of the NATO Battlefield Target Identification (BTID) system and test bed. . Initiated international initiative for Dismounted Soldier Combat Identification (DSID). Initiated software model development for the Virtual Operational Exercise for all technologies and all countries. Initiated development of CONOPS/TTPS.
- **FY 2003** - Continue SBCI Coalition Combat Identification improvements for U.S. and exportable radios. Complete BTID STANAG compliance systems and test bed developments. Develop STANAG test plan in conjunction with NATO allies. Initiate interoperability testing with Germany, UK and France. Participate in JCIET 03. Coordinate allied CCID exercises. Coordinate Virtual / Simulation Operational Exercise with CCID technologies and Allies. Continue development of CONOPS, TTPs. and training package. Continue DSID STANAG development. Coordinate and conduct MOUT-like exercise for individual soldier.
- **FY 2004** - Complete platform integration for SBCI. Coordinate allied CCID exercises. Complete technical interoperability testing with Germany, UK and France and conduct operational Allied CCID exercises. Complete Virtual / Simulation Operational Exercise with CCID technologies and Allies. Implement and refine CONOPS / TTPs in Allied operational CCID exercises. Participate in JCIET 04. Analyze Exercises JCIET 03 and 04 data to assess the current architecture. Conduct warfighter evaluation of NATO BTID, RBCI and DSID.
- **FY 2005** - Complete Warfighter evaluation of NATO BTID, Radio-Based Combat Identification (RBCI) and DSID. Analyze data from Warfighter evaluation. Implement and refine CONOPS and TTPs in Allied Operational CCID exercise. Execute CCID transition plan for Extended User Evaluation and production and fielding.

	FY 2002	FY 2003	FY 2004	FY 2005
Coalition Theater Logistics	4.700	2.500	2.300	0

Integrate logistics information and combat support tools among coalition forces.

- **FY 2002** - Successfully demonstrated the capability to plan and execute deployment and redeployment and monitor execution (CTL ACTD Objective One) in the Joint Warrior Interoperability Demonstration at PACOM in May. The Integrated Assessment Plan was finalized and the Management Plan signed
- **FY 2003** - Demonstrate the second objective (plan and execute supply and sustainment) during Cobra Gold 03. Continue to refine first objective of CTL ACTD (plan and execute strategic deployment and redeployment). Continue Military Utility Assessment. Prepare for final Military Utility Assessment in FY 2004. Refine transition plans to GCSS.

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- **FY 2004** - Demonstrate the CTL ACTD third objective (provide logistics infrastructure information). Demonstration venue unknown at this time. Continue to refine and enhance objectives one (plan and execute strategic deployment and redeployment), and two (plan and execute supply and sustainment). Conduct final Military Utility Assessment.
- **FY 2005** - Commence interim capability support phase.

	FY 2002	FY 2003	FY 2004	FY 2005
Hunter Standoff Killer Team	0	8.500	6.900	4.300

Integrate, demonstrate and transition cognitive decision-aiding technologies into various aircraft, UAVs, ground tactical operations centers and service ships providing seamless tactical command and control of airborne manned and unmanned sensors/shooters.

- **FY 2002** - Continued software builds and simulation tests for Mobile Commander Associate (MCA) and Warfighter Associates (WA). Procured hardware for HSKT simulation builds and initiated manned / unmanned teaming simulation. Procured Link-16 terminal for the first Army Airborne Command and Control Station (A2C2S) Black Hawk helicopter, selected middleware interface and conducted A2C2S / link-16 integration check. Awarded Tactical Common Data Link (TCDL) contract to procure assets for HSKT system. Integrated fully functional Link 16 data link, antenna and guidance software into the F/A-18 / Joint Standoff Weapons (JSOW) system. Continued development of CONOPs, TTPs and training package.
- **FY 2003** - Award contract to integrate TCDL and precision targeting sensor on UAV. Complete software builds for Mobile Commander's Associate (MCA) and Warfighter Associate (WA), and simulation tests for MCA, WA, and F/A-18 / JSOW. Continue manned / unmanned teaming simulation and develop tactics, techniques, and procedures (TTPs). Integrate TCDL into the first two UAVs, the first A2C2S MCA, and two AH-64 WA Longbow Apache systems. Complete hardware in the loop integration tests of the first MCA A2C2S and the WA Longbow Apache systems. Complete hardware / software integration of first two UAVs, and MCA A2C2S. Complete second A2C2S / Link-16 / TCDL, and remaining two UAV TCDL integrations. Continue development of CONOPs, TTPs and training package.
- **FY 2004** - Install sensor on 1 UAV and conduct UAV / MCA A2C2S teaming flight tests. Complete HSKT simulation and TTP development. Integrate pre-production JSOW data terminal, antenna, guidance and test system with the F/A-18 and conduct A2C2S MCA, UAV, and F/A-18 JSOW demonstration. Complete AH-64 WA / UAV flight tests. Initiate operational planning and develop preliminary user evaluations in relevant warfighter tactical environment. Conduct HSKT team test and evaluation and complete warfighter training for Joint Military Utility Assessment (JMUA) CONUS demonstration. Conduct HSKT CONUS JMUA demonstration. Initiate HSKT pre-production acquisition / fielding planning. Continue development of CONOPs, TTPs and training package.
- **FY 2005** - Deploy HSKT system to Korea and conduct second JMUA in-theater. Continue HSKT Extended User Evaluation (EUE). Execute HSKT transition plan for production and fielding. Continue development of CONOPs, TTPs and training package.

	FY 2002	FY 2003	FY 2004	FY 2005

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Joint Area Clearance	3.600	1.200	1.100	0
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Demonstrate de-mining and explosive ordnance disposal equipment for area clearance of airfields, fuel/ammunition distribution points, hospital ships, main supply routes and other rear-area activities.

- **FY 2002** - Conducted a technical demonstration and conducted two training demonstrations. Data from these exercises will form the basis of an interim military utility assessment (MUA) in mid-FY 2003.
- **FY 2003** - Conduct two MUA demonstrations and develop an interim MUA. Complete Change Detection Workstation and conduct respective technical test and MUA demonstration. Transition planning continues.
- **FY 2004** - Conduct final MUA demonstration in 1st Quarter FY2004 s and develop final MUA. Residuals targeted to be placed with the 5th Engineering Battalion, C Company at Fort Leonard Wood. Finalize requirements for ACTD products and prepare for transition to acquisition. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Loitering Electronic Warfare Killer	8.100	0.200	1.100	0.600

Demonstrate a low-cost unmanned combat aerial vehicle that weighs 60 pounds, carries a combined 200 pound lethal and non-lethal payload, and has eight hours of endurance.

- **FY 2002** - Finalized the Functional Requirements Document. Began preparation of the transition plan. Continued sub-systems and systems integration and testing. Began initial flight testing of the vehicle without payloads.
- **FY 2003** - Continue systems integration and vehicle fabrication. Fly full-scale LEWK UAV. Fly LEWK payloads for risk reduction.
- **FY 2004** – Conduct systems operational demonstrations and military utility assessment. Prepare for transition into normal acquisition process. Commence interim capability support phase.
- **FY 2005** – Conclude interim capability support phase to end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Network-Centric Collaborative Targeting	5.900	6.200	5.700	1.200

Network operation intelligence, surveillance, and reconnaissance sensors to significantly improve the capability to detect, identify, and locate time-critical targets within their cycle times.

- **FY 2002** - Continued NCCT Core Technology development by migrating NCCT capability into the NCCT System Integration Laboratory (SIL). Initiated Participant Integration Module (PIM) development by airborne platform and ground station prime contractors. Integrated NCCT Communications Equipment (NCE) required for Phase II demonstration into NCCT design. Conducted Phase I demonstration to baseline and collect data for time-sensitive target (TST) collaborative cross-cueing timelines and performance using existing data links and current Tactics, Training, and Procedures (TTPs).

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- **FY 2003** - Conduct additional Phase I demonstration to integrate precision targeting capabilities using existing data links and current TTPs. Initiate Phase II by integrating Phase I demonstration residuals into NCCT Core Technology Prototype development. Continue to develop Participant Integration Modules (PIM) for airborne platforms and ground stations. Continue to integrate NCCT Communications Equipment into the NCCT Prototype design.
- **FY 2004** – Conduct Spiral 2 Live-Fly Demo. Complete Military Utility Assessment. Commence interim capability support phase.
- **FY 2005** - Transition Spiral 3 Live-Fly Demo. Conclude interim capability support phase and end the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Personnel Recovery Extraction Survivability Aided by Smart Sensors	5.300	6.200	5.200	0

Demonstrate and transition real-time, automated, precision evader location, tracking, and re-supply devices and systems, and integrate extraction platform survivability technologies and options.

- **FY 2002** - Designed Global Personnel Recovery System (GPRS) space hardware for integration on Global Positioning System (GPS) Block III. Developed initial prototype design of miniature GPRS user device. Demonstrated integration and interoperability of C4ISR architecture for PR as part of Millennium Challenge/JEFX 2002. Developed initial CONOPS, TTPs and Assessment Plans for ACTD. Conducted technical demonstrations of Phase I survivor / evader systems. Began planning for integration of aircraft technologies on HH-60G Pavehawk.
- **FY 2003** - Continue space hardware and miniature GPRS design, fabrication and testing. Conduct fabrication, integration and preliminary testing of HH-60G Pavehawk extraction survivability sensors and suite. Conduct operational demonstrations and Joint Military Utility Assessment (JMUA) of Phase I survivor / evader systems. Develop demonstration and assessment plans, CONOPS, TTPs and training package. Initiate development of Monocular Infrared (IR) Scope for survivor / evader. Complete development of survivor Monocular IR Scope.
- **FY 2004** - Complete space hardware and miniature GPRS design, fabrication and testing. Complete integration and testing of HH-60G Pavehawk survivability suite. Conduct technical and operational demonstrations and Joint Military Utility Assessment of integrated PRESS systems, including survivability, C4ISR, and survivor / evader technologies. Continue development of CONOPS, TTPs and training package for Extended User Evaluation.
- **FY 2005** - Initiate transition strategy including Extended User Evaluation of PRESS ACTD systems and technologies and follow-on development, acquisition and fielding based on successful JMUA. Begin integration of GPRS space hardware on GPS Block III. Finalize CONOPS, TTPs, training package and Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) recommendations.

	FY 2002	FY 2003	FY 2004	FY 2005
Tactical Missile System Penetrator	6.800	7.500	2.300	0

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.

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- **FY 2002** - Continued fabrication and ground testing of missile system components.
- **FY 2003** - Commence and evaluate initial flight testing.
- **FY 2004** - Complete and evaluate flight testing.
- **FY 2005** - Deploy residual weapons. Transition to programs of record. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Theater Integrated Planning Subsystem	0.700	0.700	0.700	0.300

Automate and network the current manual processes to produce decision documents to assist in weapons of mass destruction targeting for the theater Combatant Commanders.

- **FY 2002** - Deployed and operated conventional planning capability. Developed, integrated and deployed nuclear planning capability. Integrated a software workflow manager into both the conventional and nuclear environments. Initial analysis began on the migration of theater planning tools to support a deployable configuration of TIPS.
- **FY 2003** - Provide automated conventional and nuclear planning, to include intelligence and analysis functions. Refine existing production procedures.
- **FY 2004** - Migrate nuclear and conventional planning tools to the Theater Planning Response Cells (TPRC) to support a deployable configuration. Begin work on crisis action and immediate planning capability. Refine communication links (collaboration) to Theaters. Conduct military utility assessment demonstrations and exercises.
- **FY 2005** – Commence interim capability support phase.

• FY2002 ACTDs

	FY 2002	FY 2003	FY 2004	FY 2005
Active Denial System	1.450	1.600	7.700	3.700

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.

- **FY 2002** - Implementation Directive (ID) signed establishing management oversight and overall program structure to place ADS on one hybrid-electric high-mobility, multipurpose, wheeled vehicle (HMMWV). Management Plan coordinated and approved. Concept of operation meeting conducted by operational manager. Transition meeting conducted by transition manager to define requirements for full system development. ADS effects testing ongoing with frontal exposures of human subjects at full weapons parameters scheduled. ADS source optimization started and possible integration of high-temperature superconducting coils investigated.

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- **FY 2003** - Preliminary Design Review accomplished, detailed design started. First limited military utility assessment successfully completed. Concept of operation, transition strategy development, and effects testing continuing. System integration (battle management system, HMMWV, and beam director) started. Field demonstration in 4th quarter.
- **FY 2004** - Concept of operations finalized. Source optimization, effects testing, system integration continuing. Field Test in 3rd quarter. Military utility assessment (MUA) begun.
- **FY 2005** - Effects testing and MUA finalized. Final optimization of Battle Management System and HMMWV completed. Residual handed over to transition manager.

	FY 2002	FY 2003	FY 2004	FY 2005
Advanced Notices	5.000	3.679	0.600	0.600

Demonstrate tools and techniques for destruction of certain weapons of mass destruction production facilities.

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	FY 2002	FY 2003	FY 2004	FY 2005
Agent Defeat Warhead	1.675	6.200	3.400	2.500

Demonstrate a high temperature, thermal radiation, incendiary, kinetic energy penetrator warhead to destroy biological and chemical manufacturing and storage facilities.

- **FY 2002** - Conducted agent response scaling law test and full-size lethality test with stimulant. Completed preliminary effectiveness modeling.
- **FY 2003** - Conduct subsystem hardware testing and sled testing of dispensing system. Complete preliminary effectiveness predictions.
- **FY 2004** - Conduct deceleration sensing fuse testing and sled testing of the final configuration. Conduct flight testing against biological and chemical targets with stimulant agent.
- **FY 2005** - Complete fabrication of the residual round and commence interim capability support phase.

	FY 2002	FY 2003	FY 2004	FY 2005
Agile Transportation	2.920	3.400	3.100	1.000

Demonstrate total visibility of all transportation requirements, available lift assets, personnel and equipment moving to and within the various theaters of operation.

- **FY 2002** - Completed the Technologies Application Assessment (TAA) for AT21. Established high-level requirements for the Optimizer, Mode Determination Broker (MDB), Scheduler, and the collaboration visualization capabilities of AT21.

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- **FY 2003** - Complete the JumpStart effort. Complete prototype demo on the Optimizer, MDB, and Scheduler. Determine final structure of MDB (the first of the AT21 Scheduling Decision Support Tools to be implemented). Conduct demonstration and field prototype.
- **FY 2004** - Complete collaboration visualization capabilities and Defense Transportation System (DTS) virtual data environment. Conduct demonstration and field prototype.
- **FY 2005** - Complete Optimizer, MDB, and Scheduler in the DTS data environment.

	FY 2002	FY 2003	FY 2004	FY 2005
Contamination Avoidance at Seaports of Debarkation	1.800	2.200	3.400	1.200

Demonstrate contamination avoidance at seaports of debarkation.

- **FY 2002** - Finalized initial system design and integration. Prepared for preliminary demonstrations. Conducted table top exercise. Conduct utility assessment of Theater Chemical Biological Response Package.
- **FY 2003** - Perform technology selection. Conduct preliminary demonstrations. Incorporate initial results from FY2002 base lining activities toward an upgraded CASPOD system.
- **FY 2004** - Conduct final demonstrations and utility assessments. Enhance CASPOD capabilities from the baseline systems and based on findings from technical demonstrations.
- **FY 2005** - Transition technology and lessons learned. Conduct residual training and support.

	FY 2002	FY 2003	FY 2004	FY 2005
Coalition Information Assurance Common Operational Picture	0.95	3.900	3.600	3.800

Integrate information assurance and visualization tools and techniques to coalition network management processes and procedure to address interoperability policy issues.

- **FY 2002** - Project start was delayed by change in operational sponsorship and user requirements definition. Prepared for initial demonstrations with Canada.
- **FY 2003** - Integrate commercially available computer network defense tools with those from previous ACTDs for implementation in the Coalition Federated Battle Lab Network. Conduct major demonstration with Allied and coalition partners in conjunction with Joint Warfighter Interoperability Demonstration (JWID) 03. Engage policy makers in US and allies on sharing of network status and information assurance postures. Leverage new multinational computer network defense (CND) policy between five nations (US, UK, Canada, Australia, and New Zealand) as starting point for CONOPS. Initiate Pacific Rim (PACRIM) participation.
- **FY 2004** - Refine information sharing agreements for information assurance posture and network status in coalition environments. Provide visualization

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interface for network managers for mission impact assessment and response recommendations to commanders. Conduct military utility assessment. Expand with NATO and PACRIM participation.

- **FY 2005** - Conduct technology refresh opportunity assessment. Prepare to transition information assurance and visualization tools from Coalition Federated Battle Lab Network to operational networks. Transition of software modules to life cycle management. Continue to refine information sharing agreements for information assurance posture and network status in expanded coalition environments. Work with USJFCOM for integrating C-IA COP into the Standing Joint Headquarters deliverable.

	FY 2002	FY 2003	FY 2004	FY 2005
Expendable Unmanned Aerial Vehicle	2.925	4.200	0.700	0.500

Demonstrate covert delivery of off-board sensors, tactical surveillance, battle damage assessments and weapons of mass destruction monitoring without risking personnel.

- **FY 2002** - Completed integration design and fabrication of prototype vehicle and avionics. Demonstrated initial capability.
- **FY 2003** – Upgrade avionics and data dissemination capabilities. Finalize vehicle/avionics design and produce residual units. Developed CONOPS and commence military utility assessment.
- **FY 2004** - Deliver residual systems and conduct final military utility assessment. Commence transition and interim capability support phase.
- **FY 2005** - Continue interim capability support phase. End the ACTD.

	FY 2002	FY 2003	FY 2004	FY 2005
Homeland Security Command and Control	4.780	7.000	4.600	3.700

Refine and transition technologies and operational concepts that support the Homeland Security missions assigned to the Department of Defense

- **FY 2002** - Completed an initial demonstration to simulate incidents in the State of Louisiana and Chesapeake, Virginia. The Command and Control infrastructure field during the demonstration facilitate information sharing between dispersed locations. Participants included JFCOM, National Guard, the State of Louisiana and city of Chesapeake, Virginia. Established interagency coordination with the US Marshal Service within the Department of Justice and Bureau of Alcohol, Tobacco and Firearms within the Department of Treasury for coordination, interoperability and support.
- **FY 2003** – Continue demonstrations with focus on matching technical capability to development of concepts of operations and employment as determined by Northern Command in order to fulfill their assigned missions. Provide a fielded, initial capability and migrate capability to Joint Task Force Civil Support in its new assignment at Northern Command.
- **FY 2004** – Continue to expand and field additional capabilities. Expand multi-agency coordination with Federal Departments including working through the responsible OSD office for Homeland Security and the Federal Department of Homeland Security.

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- **FY 2005** - Field final C2 capabilities which include information assurance, consequence management and attribution. Field concepts of operations and employment to guide military participation in homeland security missions and coordination procedures with appropriate Federal agencies and departments.

	FY 2002	FY 2003	FY 2004	FY 2005
Hyperspectral Collection and Analysis	3.000	3.700	1.600	0.200

- **FY 2002** - Develop exploitation algorithms and a tactical hyperspectral sensor.
- **FY 2003** – Develop, integrate, and flight test tactical hyperspectral sensor on board MQ-1 Predator. Modify processing and exploitation algorithms. Integrate processing exploitation and dissemination system in Predator Ground Control Station. Develop concept of operations and employment for tactical hyperspectral sensor.
- **FY 2004** – Demonstrate the tactical hyperspectral sensor and a Global Hawk hyperspectral sensor. Refine concept of operations.
- **FY 2005** - Transition tactical hyperspectral sensor to Aeronautical Systems Center for possible future development.

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	FY 2002	FY 2003	FY 2004	FY 2005
Joint Distance Support and Response	1.000	3.100	2.900	3.100

Integrates, demonstrates and transitions the Military Services' unique tele-maintenance initiatives and develops joint concept of operations/tactics, techniques and procedure to establish a common and interoperation tele-maintenance environment.

- **FY 2002** - Coordinated and planned for technical demonstrations with assistance from the Air Force Operational Test and Evaluation Center (AFOTEC). Initiated demonstration requirements with USAFE for first operational demonstration. Completed evaluation of bandwidth mitigation technology including advance wave compression, and application specific bandwidth management. Completed USAFE business modeling and simulation for establishing joint common maintenance processes. Completed hero testing and submission for certification for wireless technology for ship board operations. Completed draft development of JDSR transition strategy, training requirements and CONOPS and TTPs. Established contract with Johns Hopkins University (JHU)/Applied Physics Laboratory (APL) for support in the development of the CONOP and TTPs.
- **FY 2003** – Perform the CONOPS/TTP planning sessions for the Warfare Analysis Laboratory Exercise (WALEX). Coordinate with Services maintenance community for the development of the CONOPS/TTP. Complete development of a CONOPS/TTP document. Complete planning for the Integrated Assessment Plan (IAP). Complete Development Training Plans and documentation. Complete development of the IAP document. Perform site surveys for first Operational Demonstration (USAFE). Complete development of the Demonstration Execution Document (DED). Perform Training in accordance with the training strategy for first demonstration. Complete planning and set-up of demonstration laboratory. Generate Quick Look Report for first demonstration. Coordinate and plan second demonstration. Complete the JDSR system design and architecture for the USAFE demonstration. Complete build-up of local maintenance network software and knowledge center software. Perform system integration and full system tests. Conduct USAFE operational demonstration according to measures of effectiveness and critical operational issues. Modify and update the modeling and simulation for the second operational demonstration. Certify software and hardware for use in the second operational demonstration. Procure, build and integrate the JDSR Alpha system for the second operational demonstration. Continue coordination and refinement of JDSR transition strategy, training requirements and CONOPS and TTPs. Conduct preliminary operational demonstration in support of JMUA Quicklook.
- **FY 2004** – Complete development of second demonstration with situational awareness, auto data capture and advance search engine. Perform second Technical Demonstration. Perform second Operational Demonstration. Update JDSR with lessons learned from the second Operational Demonstration. Perform technical demonstration for JMUA. Conduct full system operational demonstration in support of JMUA. Develop recommendations for DOTMLPF issues based on JMUA results and report. Complete development and refinement of transition plan. Complete validation of business modeling and simulation for establishing joint common maintenance processes based on JMUA results. Complete development of local maintenance network software and knowledge center software, version 1.0. . Continue development of CONOPs, TTPs and training package. Prepare for EUE and initiation of transition if JMUA is positive.
- **FY 2005** - Initiate transition strategy including conduct of Extended User Evaluation of residual package, and follow-on development, acquisition and

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fielding. Purchase spares for EUE support. Continue development of CONOPs, TTPs and training package. Upgrade [as needed] business modeling and simulation for establishing joint common maintenance processes based on preliminary EUE results.

	FY 2002	FY 2003	FY 2004	FY 2005
Joint Explosive Ordnance Disposal	2.000	4.500	4.600	4.900

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.

- **FY 2002** - Completed architecture development. Conducted proof of concept exercise in conjunction with MC-02. Developed JEOD Mission Support Center requirements.
- **FY 2003** – Conducted baseline exercises. Develop and exercise reach back capability. Integrate robotics with digital x-ray capability. Complete Joint TTPs for EOD forces conducting AT operations. Demonstrate contextual view to individual warriors based on relevance. Populate JEOD domain facts and beliefs repository. Perform initial military utility assessment.
- **FY 2004** - Complete Mission Support Center Development. Continue development of Decision Support System, Complete Technical Evaluation, conduct operational demonstration and military utility assessment for transition of initial operational capability.
- **FY 2005** - Improve Decision Support System capabilities. Conduct final ACTD Operational Demonstration and Military Utility Assessment. Field operational capability.

	FY 2002	FY 2003	FY 2004	FY 2005
Language and Speech Exploitation Resources	2.700	4.500	1.100	0

Demonstrate technologies, concepts, and architecture paths to reduce language barriers.

- **FY 2002** - Approved Implementation Directive. Identified foreign language translation requirements and priorities, surveyed technologies. Established IPTs to design projects and initiate development, integration and modification. Developed Management Plan and began its coordination.
- **FY 2003** – Approve Management Plan. Conduct laboratory and CONUS testing of text-to-text and speech-to-speech translation projects. Define architecture and integration approach. Conduct project-level military utility assessments, including document exploitation. Transition at project level as appropriate.
- **FY 2004** – Develop interim assessment of military utility for technologies and concept of operations assigned to each Integrated Process Team. Develop transition plan for LASER products and oversight of language translation initiatives throughout the Government.
- **FY 2005** - Conduct capstone demonstrations and military utility assessments. Finalize concepts of operations and tactics, techniques and procedures for user adoption. Begin implementation of transition plan. Assess opportunities for residuals in combatant command areas other than the ACTD sponsor.

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	FY 2002	FY 2003	FY 2004	FY 2005
Micro Air Vehicle	1.000	4.400	3.400	3.100

Provide small, ground combat units with situational awareness of enemy activity using a low-cost, disposable, fully autonomous 6-9 inch unmanned aerial vehicle as an organic asset at the platoon level.

- **FY 2002** - Fabricated and delivered 25 Phase I battery-electric systems (one user interface and three air vehicles per system). Commenced Phase I field evaluations.
- **FY 2003** – Conclude Phase I field evaluations. Integrate feedback into fabrication of 25 Phase 2 diesel systems. Begin Phase II field evaluations.
- **FY 2004** – Conclude Phase II field evaluations. Integrate feedback into fabrication of 25 Phase III hybrid diesel-electric systems. Begin Phase III field evaluations.
- **FY 2005** - Conclude Phase III field evaluations. Integrate feedback into fabrication of optimized MAV systems. Conduct capstone exercise and perform military utility assessment. Prepare for transition of residual systems for extended user evaluation.

	FY 2002	FY 2003	FY 2004	FY 2005
Pathfinder	0.900	3.400	1.000	0.800

Integrate capabilities of unattended ground vehicles, air vehicles and smart sensors in a mobile, self-forming network to improve urban reconnaissance.

- **FY 2002** - Formulated program plan and team. Completed the Implementation Directive and the Management Plan. Conducted initial technology search and began evaluation of component technologies immediately available for application to sensors, unmanned platforms, adaptive networks, communications, data fusion and displays. Began limited objective experimentation (LOEs) with component technologies. Participated in Millennium Challenge '02.
- **FY 2003** – Continue technology search and component evaluation. Continue appropriate LOEs and conduct experiments with Ranger units. Begin system integration activities and begin formulation of the Pathfinder system architecture. Begin transition activities as appropriate.
- **FY 2004** – Continue and complete technology search and component evaluation. Complete system integration activities. Continue appropriate LOEs and conduct experiments with Ranger units. Continue transition activities as appropriate.
- **FY 2005** - Conduct culminating demonstration. Commence and provide support for the extended user evaluation (EUE). Continue transition activities.

	FY 2002	FY 2003	FY 2004	FY 2005
Signals Intelligence (SIGINT) Processing	0.500	0	0.600	0

Provide a SIGINT processing mode and determine its military utility.

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	FY 2002	FY 2003	FY 2004	FY 2005
Space-Based Moving Target Indicator (MTI)	0	6.800	6.300	0.783

Demonstrate space-based moving target indicator capabilities using existing platform assets.

- **FY 2002** - Developed and integrated MTI signal processing software and tasking software.
- **FY 2003** – Develop and verify algorithms. Test signal processing and tasking software.
- **FY 2004** – Conduct hardware assessment and testing. Commence interim capability support phase.
- **FY 2005** – Conduct final military utility assessment. Conclude interim capability support phase.

	FY 2002	FY 2003	FY 2004	FY 2005
SPARTAN	1.000	1.200	4.000	3.100

Demonstrate an unmanned surface watercraft as a low-cost force multiplier with integrated expeditionary sensor and weapon system for use against asymmetric threats.

- **FY 2002** – Commence development of the Command Decision System (CDS) and Intelligence, Surveillance and Reconnaissance Module (ISRM). Begin systems integration, initial testing and handling system development.
- **FY 2003** – Commence development of the Undersea Warfare Module (USWM). Continue CDS and ISRM development and integration/testing.
- **FY 2004** – Complete development of the ISRM. Continue all other above activities throughout the year.
- **FY 2005** – Complete development of the CDS and USWM, as well as integration and systems testing. Complete military utility assessment and begin interim capability support phase.

	FY 2002	FY 2003	FY 2004	FY 2005
Thermobarics	1.200	4.500	5.700	2.500

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.

- **FY 2002** - Conducted payload development program.
- **FY 2003** – Conduct full-scale validation tests. Down select explosive fill material. Select warhead and integrate explosive. Produce test assets and conduct weapons systems qualification tests. Develop weapon effectiveness models for planning tool.
- **FY 2004** – Complete operational demonstrations of weapon and planning tool capability. Produce residual weapons.

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- **FY 2005** - Deliver 10-20 thermobaric-filled residual warheads. Conduct user training.

• FY2003 ACTDs

	FY 2003	FY 2004	FY 2005
Adaptive Joint C4ISR Node (AJCN)	5.027	6.320	4.305

Develops, integrates, demonstrates and transition a multi-mission radio frequency system that provides seamless interoperable communications, simultaneously with signal intelligence, electronic warfare, and information operations capabilities.

- **FY 2003** -Completed contractor evaluation and initiate ACTD payload development. Finalize requirements definition with Warfare Analysis Laboratory Exercise (WALEX). Demonstrate multi-mission performance baseline in laboratory demonstration. Conduct flight test on RC-12 or C-232 to evaluate in-flight co-site mitigation performance. Integrate Joint Tactical Radio System (JTRS) Single-Channel, Ground-to-Air Radio System (SINCGARS) waveform within AJCN architecture to demonstrate feasibility of porting JTRS waveforms. Complete KC-135 antenna layout and isolation measurements in preparation for Interim Joint Military Utility Assessment (IJMUA) in FY 04. Initiate development of CONOPS, TTPs and training package. Complete development of the Integrated Assessment Plan. Complete Implementation Directive and Management Plan.
- **FY 2004** –Integrate AJCN payload and antennas on KC-135 aircraft. Conduct the IJMUA with flight demonstrations on a single KC-135 aircraft and prepare an IJMUA report. Continue development of CONOPS, TTPs and training package and conduct WALEX focused on evaluating CONOPS.
- **FY 2005** – Integrate AJCN payloads and antennas on KC-135 and Hunter aircraft (2 each). Conduct flight tests to verify operation of payload and AJCN network and explore CONOPS. Conduct JMUA exercises and prepare final report. Conduct final WALEX exercise and refine CONOPS and TTPs based on JMUA and WALEX results. Initiate transition strategy and prepare for Extended User Evaluation.

	FY 2003	FY 2004	FY 2005
Deployable Cargo Screening (DCS)	0	1.149	.369

Provide a deployable capability to detect explosive threats in pallet loads of cargo moving in the defense transportation system.

- **FY 2003** - Award contract and begin application of military modifications.
- **FY 2004** - Accept delivery, proceed with technical and operational demonstrations. Demonstrate during military operations. Analyze various logistics support concepts. Conduct interim assessment.
- **FY 2005** - Continue with military exercises and Ad Hoc operational and technical testing. Complete military assessment. Lessons learned transitioned to objective vessel. Concepts of Operations, tactics, techniques and procedures also transitioned.

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	FY 2003	FY 2004	FY 2005
Foliage Penetration Synthetic Aperture Radar	1.000	1.149	1.230

Provides real-time detection and cueing of stationary targets obscured by foliage and under camouflage using tactical and national sensors.

- **FY 2003** - Prepare FOPEN SAR airborne testbed for deployment to SOUTHCOM area of responsibility (AOR). Conduct initial performance testing against ground-truthed targets in safe triple-canopy jungle areas in Central/South America. Develop hardware and software refinements and improved data exploitation strategies to address SOUTHCOM Counterdrug/Counter-terror targets and environment.
- **FY 2004** - Conduct operational utility testing as a part of active SOUTHCOM operations, working in conjunction with other theater ISR assets and host-country interdiction forces. Develop CONOPS and TTPs, and hardware/software/exploitation refinements to improve effectiveness. SOUTHCOM to make a preliminary military utility assessment. Army PEO IEW&S to develop long-range FOPEN technology transition plan. Testbed transitioned to SOUTHCOM for residual phase operations and assessments.
- **FY 2005** - SOUTHCOM to operate the testbed in theater as an operational intelligence, surveillance and reconnaissance (ISR) asset, on an estimated 50:50 operational tempo (OPTEMPO). Refine CONOPS and TTPs.

	FY 2003	FY 2004	FY 2005
Gridlock	4.000	4.481	3.998

Provided 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 precision guided munitions.

- **FY2003** - Achieve accuracy and timeliness goals in live end-to-end laboratory technology demonstration.
- **FY2004** - Achieve accuracy and timeliness goals in Predator UAV field exercises. Initiate transition to operations for Predator imagery upon successful achievement of goals.
- **FY2005** - Achieve accuracy and timeliness goals in Global Hawk and U-2 field exercises. Complete transition to support Predator UAV operations.

	FY 2003	FY 2004	FY 2005
High Altitude Airship	2.000	4.596	4.920

Provide a prototype, solar powered airship that can fly untethered at 70,000 feet altitude with 4,000 pounds of communication and surveillance payload.

- **FY2003** - Initiate airship design and development, to include materials and envelope fabrication, seaming, power (generation, management, and distribution), propulsion systems, and C2 subsystem development. Initiate payload requirements definition, protocol identification, selection, interface design, and development. Perform parallel risk reduction efforts.
- **FY2004** - Complete airship vehicle design and development. Integrate subsystems. Perform vehicle and subsystem ground tests. Perform

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initial vehicle flight tests. Complete payload interface design and development. Initiate payload integration.

- **FY2005** - Initiate integrated airship flight-testing with demonstration payload. Complete risk assessments. Complete integrated airship system testing. Perform demonstrations. Complete limited Military Utility Assessment (MUA). Transition the ACTD to further development, system acquisition, and low-rate production.

	FY 2003	FY 2004	FY 2005
Joint Blue Force Situational Awareness	2.400	1.953	0.369

Develops, demonstrates, and transitions seamless integration of joint blue force situational awareness tracking systems within its architecture and CONOPS/TTPs.

- **FY 2003** - Initiate development and creation of the Testbed Mission Management Center (MMC). Integrate JBFSA ACTD spiral 1 capabilities into selected venue. Develop and execute Spiral 1 exercise and CONOPs and conduct QuickLook Joint Military Utility Assessment (JMUA). Determine Spiral 2 Venue. Start Spiral 2 exercise CONOPs. Integrate JBFSA ACTD Spiral 2 capabilities into selected venue. Start development of CONOPs, TTPs and training package and include Spiral 1 lessons learned. Develop ACTD transition plan and strategy. Develop DOTMLPF recommendations for all Spiral 1 activities.
- **FY 2004** - Continue planning and integration of JBFSA ACTD Spiral 2 capabilities into selected venue and initialize Spiral 2 exercise CONOPs. Upgrade Testbed MMC to execute Spiral 2 as needed. Execute Spiral 2 exercise and CONOPs and conduct QuickLook JMUA. Determine Spiral 3 venue and develop Spiral 3 exercise CONOPs. Upgrade Testbed MMC to execute Spiral 2, as needed. Execute Spiral 3 exercise and CONOPs and conduct JMUA. Continue development of CONOPs, TTPs and training package based on Spiral 2 and 3 results. Finalize transition plan and strategy. Create DOTMLPF recommendations for Spiral 2 and Spiral 3 activities.
- **FY 2005** - Conduct Extended User Evaluations of residual package. Initiate transition of JBFSA products to targeted programs of record (POR) for follow-on development, acquisition and fielding, pending results of FY04 JMUA. Review DOTMLPF recommendations based on JMUA report and results. Continue development of CONOPs, TTPs and training package.

	FY 2003	FY 2004	FY 2005
Midnight Stand (formerly Idaho Thunder)	2.000	2.298	0

Provides an offensive information operations program which demonstrates the ability to perform specific offensive information operations measures in a real-world environment.

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	FY 2003	FY 2004	FY 2005
Night Vision Cave and Urban Assault (NVCUA)	1.000	6.463	6.418

Provides advanced lightweight imaging sensor technologies allowing long-range surveillance identification for dismounted assault in difficult and restricted terrain.

- **FY2002** - Developed, integrated and demonstrated quick reaction payload of approach sensors for the Rapid Insertion of Robotics for the Soldier (RIRS) initiative, as requested by Vice Chief of Staff, Army.
- **FY2003** - Form program team and establish IPTs. Prepare and coordinate Management Plan. Initiate technology development effort for Approach Sensors and Cave Assault Kit. Perform component and project level testing. Prepare exercise and evaluation plans for Operational Demonstration I. Develop initial Concepts of Operations (CONOPs) and Tactics, Techniques and Procedures (TTPs). Initiate transition planning.
- **FY2004** – Conduct Operational Demonstration I with Approach Sensors and Cave Assault Kit. Perform initial military utility assessment. Refine CONOPS and TTPs based on lessons learned from Demo I. Prepare exercise and evaluation plans for Operational Demonstration II. Initiate technology development for the Enhanced Cave Assault Kit and the Urban Assault Kit. Continue transition planning activities.
- **FY2005** – Complete development of Enhanced Cave Assault Kit and Urban Assault Kit. Conduct Operational Demonstration II. Perform Military Utility Assessment and measures of performance/measures of effectiveness analysis. Refine CONOPs, TTPs and training packages. Continue preparations for transition to acquisition.

	FY 2003	FY 2004	FY 2005
Overwatch	3.000	2.286	1.230

Provides the capability for ground forces to immediately direct precision fire support for infantry operations in land and urban warfare, peacekeeping and peace enforcement missions.

- **FY 2003** - Collect data and extend database of small arms for theater specific weapons. Update Overwatch system/subsystem requirements and develop hardware specs. Acquire system components (sensor, processor), integrate and test. Update system software for new hardware configurations including laser ranger/marker and imager. Develop initial CONOPS using Overwatch testbed.
- **FY 2004** - Install and integrate Overwatch system on HMMWV. Perform Full Scale Test 1 - a limited user test (LUT) to benchmark system performance. Develop/update classification software based on theater specific target set. Continue CONOPS development using Full Scale Test.
- **FY 2005** - Perform Major System Demonstration 1 with HMMWV based system. Develop and acquire hardware for UGV-based Overwatch system. Update system software for UGV operation. Perform Full Scale Test 2 - a limited user test (LUT) with UGV based system.

	FY 2003	FY 2004	FY 2005

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Tactical Interferometric Synthetic Aperture Radar (IFSAR) Mapping	4.500	6.894	1.230
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Provide theater-wide three-dimensional, fine resolution terrain data and synthetic aperture radar imagery for mission planning and rehearsal data acquisition in joint operations.

- **FY2003** - Design tactical IFSAR sensor system. Baseline IFSAR data using surrogate collection capability.
- **FY2004** - Fabricate sensor 001/002. Conduct laboratory testing and validation experimentation.
- **FY2005** - Test and integrate UAV system. Demonstrate initial collection capability. Conduct interim Military Utility Assessment (MUA).

	FY 2003	FY 2004	FY 2005
Theater Support Vessel (TSV)	5.000	5.745	9.225

Provide a theater commander a high-speed, intra-theater sealift capability to support all theater engagement requirement within his area of responsibility including operational movement, repositioning and sustainment of combat forces.

- **FY 2003** - Award contract and begin application of military modifications by end of FY.
- **FY 2004** - Accept delivery, proceed with technical and operational demonstrations. Demonstrate during military operations. Analyze various logistics support concepts. Conduct interim assessment.
- **FY 2005** - Continue with military exercises and Ad Hoc operational and technical testing. Complete military assessment. Lessons learned transitioned to objective vessel. Concepts of Operations, tactics, techniques and procedures also transitioned.

	FY 2003	FY 2004	FY 2005
Tunnel Target Defeat (TTD)	3.000	0	0

Provides the means to defeat underground facilities and the threatening assets they protect.

- **FY2003** - Develop initial software for the Underground Target Analysis System (UTAS); reach initial capability with the Underground Analysis and Planning System (UGAPS) database that integrates target characterization, aim point selection and high-fidelity weapons effects analysis; update the Munitions Effects Assessment tool to include the capability to predict ground shock and tunnel response and display the probability of damage contours on the 3D target model; expand the capability of the Integrated Target Planning Tool Set (ITPTS) to provide interoperability among the tools and data sources used for nuclear planning.
- **FY2004** - Conduct 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; perform semi-precision, in-situ field test to provide scaled tunnel response test data on an actual jointed limestone site; design nuclear ground shock simulator for full-scale ACTD target facility event to demonstrate tunnel defeat capability.

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- FY2005 - 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 weaponize the full-scale ACTD event; provide residual capabilities to USSTRATCOM.

	FY 2003	FY 2004	FY 2005
Urban Recon (UR)	1.475	1.666	1.507

Provide advanced airborne and terrestrial 3-D reconnaissance capability using rapid processing software for sensor data and decision air software.

- **FY 2003** - Design, fabricate, and test prototype laser sensor hardware and software configurations for vehicle-mounted, soldier-borne, and UAV-mounted configurations. Demonstrate utility of surrogate Urban Recon data within JRX03 and acquire user feedback. Conduct technical demonstrations of prototype sensors focusing on acceptable laser standoff ranges, overall laser performance, and data quality. Develop prototype 3-D point cloud visualization software supporting real-time visualization and 3-D image manipulation. Begin development of 3-D data fusion software supporting automatic mosaic of 3-D image data from flash laser collections. Develop initial demonstration and assessment plans, CONOPS, TTPs and training package. Begin planning for integration of laser, Global Positioning System/Inertial Measurement Unit (GPS/IMU), and gimbals on user identified UAV (15 lb payload).
- **FY 2004** - Refine prototype designs and complete development of baseline laser sensor hardware and software configurations for vehicle-mounted, soldier-borne, and UAV-mounted configurations. Integrate GPS/IMU (position/orientation system) into sensor system configuration. Integrate laser into gimbal for UAV-mounting. Develop UAV control interface to support steer/stare/step of laser over collection areas. Develop remote sensor operation software for UAV. Complete auto-mosaic data fusion software. Develop data cataloguing and indexing software for mission analysis software. Conduct operational demonstration (JRX04) of vehicle-mounted, soldier-borne, and UAV-mounted laser sensors using baseline CONOPS and TTPs. Conduct Military Utility Assessment (MUA) of each integrated sensor configuration (soldier-borne, vehicle-mounted, and UAV-mounted). Continue development of CONOPS, TTPs and training package for warfighter evaluation. Initiate transition strategy based upon initial MUA results.
- **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 MUA of each integrated sensor configuration. Complete development of CONOPS, TTPs and training package. Conclude transition strategy supporting follow-on development, acquisition and fielding based on successful MUA.

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

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E. Major Performers: N/A. The majority of funding from this Program Element is forwarded directly to the Services/Defense Agencies who manage all contracting and support requirements.

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F. Specific funding for each ACTD by fiscal year of new start (*Dollars in Millions*).

<u>FY 1996 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Airbase/Port Biological Detection*	0	0	0	0
Battlefield Awareness and Data Dissemination*	0	0	0	0
Combat Identification*	0	0	0	0
Combat Vehicle Survivability*	0	0	0	0
Counterproliferation I*	0	0	0	0
Counter Sniper*	0	0	0	0
Joint Logistics*	0	0	0	0
Joint Readiness Extension to Advanced Joint Planning *	0	0	0	0
Low Life Cycle Cost, Medium Lift Helicopter*	0	0	0	0
Miniature Air Launched Decoy*	0	0	0	0
Navigation Warfare*	0	0	0	0
Semi-Automated IMINT Processing*	0	0	0	0
Tactical UAV*	0	0	0	0
Theater High Energy Laser*	0	0	0	0

*Completed

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<u>FY 1997 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Chemical Add-On to Biological Detection*	0	0	0	0
Consequence Management*	0	0	0	0
Counterproliferation II	0.200	0	0	0
Extending the Littoral Battlespace** (Note 1)	14.662	15.400	7.500	0
Information Operations Planning Tool*	0	0	0	0
Integrated Collection Management*	0	0	0	0
Joint Advanced Health and Usage Monitoring System**	.0.900	1.200	0.800	0
Military Operations in Urban Terrain*	0	0	0	0
Rapid Terrain Visualization*	0	0	0	0

* Completed

** Completed the demonstration phase of the ACTD.

Note 1: ELB has concluded the demonstration phase. ACTD will not be complete until the JTF Warnet module is concluded (expected FY 04).

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<u>FY 1998 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Adaptive Course of Action**	1.200	0	0	0
C4I for Coalition Warfare*	1.500	0	0	0
High Powered Microwave*	0	0	0	0
Information Assurance: AIDE*	1.200	0	0	0
Joint Bio Remote Early Warning System*	0	0	0	0
Joint Continuous Strike Environment*	2.100	0	0	0
Joint Modular Lighter System*	0	0	0	0
Line-of-Sight Anti-Tank	3.600	0	0	0
Link 16*	0	0	0	0
Migration Defense Intelligence Threat Data System*	0.100	0	0	0
Precision Targeting Identification*	0	0	0	0
Space Based Space Surveillance Operations*	0	0	0	0
Theater Precision Strike Operations**	0	0	0	0
Unattended Ground Sensors*	0	0	0	0

*Completed

** Completed the demonstration phase of the ACTD

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<u>FY 1999 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Battle Damage Assessment in the Joint Targeting Toolbox**	0.200	0	0	0
Coherent Analytical Computing Environment**	0.300	0	0	0
Common Spectral MASINT Exploitation Capability*	0	0	0	0
Compact Environment Anomaly Sensor II **	0	0	0	0
Force Medical Protection*	0.400	0	0	0
Human Intelligence and Counterintelligence Support Tools*	0.500	0.200	0	0
Joint Medical Operations Telemedicine*	1.500	0	0	0
Joint Theater Logistics**	0	0	0	0
Personnel Recovery Mission Software*	0	0	0	0
Small Unit Logistics *	0	0	0	0
Theater Air and Missile Defense Interoperability	1.700	0.500	0	0

*Completed

** Completed the demonstration phase of the ACTD

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<u>FY 2000 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
CINC 21	10.200	5.200	1.600	0.400
Coalition Aerial Surveillance and Reconnaissance	4.700	2.100	3.000	0.600
Communication/Navigation Outage Forecasting System	0.300	0.900	0.500	0
Computerized Operational MASINT Weather	1.300	1.300	0	0
Content-Based Information Security	0.200	0	0	0
Global Monitoring of ISR Space Systems	0.300	0.300	0.200	0
Ground-To-Air Passive Surveillance	1.800	1.200	0	0
Joint Intelligence, Surveillance and Reconnaissance	2.400	0	0	0
Multiple Link Antenna System	1.500	3.700	0	0
Quick Bolt	7.700	6.200	0	0
Restoration of Operations	3.200	1.900	1.700	0
Tri-Band Antenna Signal Combiner	0	0	0	0

*Completed

** Completed the demonstration phase of the ACTD

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<u>FY 2001 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Active Network Intrusion Defense	1.800	2.000	1.800	1.200
Adaptive Battlespace Awareness	3.100	3.200	1.600	1.000
Advanced Tactical Laser (Note 2)	11.800	6.200	6.011	1.200
Advanced Technology Ordnance Surveillance	1.200	0.800	0.700	0.700
Area Cruise Missile Defense	2.800	2.000	0	0
Coalition Combat Identification	0.000	5.600	4.600	3.100
Coalition Theater Logistics	4.700	2.500	2.300	0
Coastal Area Protection System*	0	0	0	0
Hunter Standoff Killer Team	0	8.500	6.900	4.300
Joint Area Clearance	3.600	1.200	1.100	0
Loitering Electronic Warfare Killer	8.100	0.200	1.100	0.600
Network-Centric Collaborative Targeting	5.900	6.200	5.700	1.200
Personnel Recovery Extraction Survivability Aided by Smart Sensors	5.300	6.200	5.200	0
Tactical Missile System Penetrator	6.800	7.500	2.300	0
Theater Integrated Planning Subsystem	0.700	0.700	0.700	0.300

*Completed

** Completed the demonstration phase of the ACTD

Note 2: Advance Tactical Laser FY2002 total includes a \$7million congressional plus-up.

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<u>FY 2002 ACTDs</u>	FY 2002	FY 2003	FY 2004	FY 2005
Active Denial System	1.450	1.600	7.700	3.700
Advance Notices	5.000	3.679	0.600	0.600
Agent Defeat Warhead	1.675	6.200	3.400	2.500
Agile Transportation	2.920	3.400	3.100	1.000
Coalition Information Assurance Common Operational Picture	0.950	3.900	3.600	3.800
Contamination Avoidance at Seaports of Debarkation	1.800	2.200	3.400	1.200
Expendable Unmanned Aerial Vehicle	2.925	4.200	0.700	0.500
Homeland Security Command and Control	4.780	7.000	4.600	3.700
Hyperspectral Collection and Analysis	3.000	3.700	1.600	0.200
Joint Distance Support and Response	1.000	3.100	2.900	3.100
Joint Explosive Ordnance Disposal	2.000	4.500	4.600	4.900
Language and Speech Exploitation Resources	2.700	4.500	1.100	0
Micro Air Vehicle	1.000	4.400	3.400	3.100
Pathfinder	0.900	3.400	1.000	0.800
Signals Intelligence Processing	0.500	0	0.600	0
Space-Based Moving Target Indicator	0	6.800	6.300	0.783
SPARTAN	1.000	1.200	4.000	3.100
Thermobarics	1.200	4.500	5.700	2.500

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<u>FY 2003 ACTDs</u>	FY 2003	FY 2004	FY 2005
Adaptive Joint C4ISR Node	5.027	6.320	4.305
Deployable Cargo Screening	0	1.149	0.369
Foliage Penetration Synthetic Aperture Radar	1.000	1.149	1.230
Gridlock	4.000	4.481	3.998
High Altitude Airship	2.000	4.596	4.920
Joint Blue Force Situational Awareness	2.400	1.953	0.369
Midnight Stand (formerly Idaho Thunder)	2.000	2.298	0
Night Vision Cave and Urban Assault	1.000	6.463	6.418
Overwatch	3.000	2.286	1.230
Tactical IFSAR Mapping	4.500	6.894	1.230
Theater Support Vessel	5.000	5.745	9.225
Tunnel Target Defeat	3.000	0	0
Urban Recon	1.475	1.666	1.507

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