

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION (PE 0603750D8Z)	

Cost (\$ in Millions)	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009
ACTD/P523	195.136	218.167	213.901	202.510	204.714	209.705	214.405

A. Mission Description and Budget Item Justification

BRIEF DESCRIPTION OF ELEMENT: The Department of Defense (DoD) places increased emphasis on the need to rapidly develop and field new joint technological capabilities, and to explore innovative and transformational concepts associated with these capabilities. This emphasis recognizes technology superiority as America's asymmetric military advantage and a critical driver in efforts to equip a transformed military force. 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: 1) they provide experienced joint combat commanders with an opportunity to develop operational concepts and operational requirements to fully exploit the technologies provided; 2) allow the users an opportunity to assess the military utility of the proposed capability prior to a major acquisition commitment; 3) provide military Services a mechanism for compressing acquisition cycle time, significantly improving their response to priority operational needs. As such, while the ACTD program is not an "acquisition program," these timely joint demonstrations do play a key role in the DoD acquisition excellence process. ACTDs do not substitute for formal DoD acquisition procedures, but they "jump-start" the acquisition process for rapid, effective operational employment of

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 1 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION (PE 0603750D8Z)	

joint technologies which are verified by combatant commands to have demonstrated military utility.

Since FY 1999, ACTDs have also served as 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 of the major regional and specified Combatant Commanders. 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.

DUSD (AS&C) works closely with the Joint Staff to identify investment opportunities from the new Joint Capabilities Integrated and Development System (JCIDS). The AS&C staff is functionally organized to parallel the Joint Staff's new Functional Capability Boards (FCBs), and aims to design ACTDs that specifically address gaps in joint capability roadmaps developed by these joint requirements oversight groups. AS&C meanwhile cultivates a close and direct dialog with all major joint Combatant Commanders, and continues to recognize their needs as the primary thrust of ACTD efforts.

Ideally, the Military Departments and Defense Agencies provide a majority of the funding required to successfully demonstrate an ACTD (which includes dedicated-in-kind resources). However, the Defense Wide RDT&E funding managed by AS&C is meant to offer a joint leverage to encourage Service/Agency commitment to the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 2 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION (PE 0603750D8Z)	

Funding from this program element is used: 1) to support actual demonstrations and experimental employment; 2) provide hardware, software and communications to demonstrate military utility; and 3) 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, sometimes referred to as an "extended user evaluation," provides the Combatant Commanders, Services, Agencies, and operators with adequate time to continue addressing transition issues of supportability, maintainability and training identified by the ACTD.

Since program commencement in 1994, DUSD(AS&C) has initiated 129 ACTDs. Fifty-five of these were completed by the end of Fiscal Year (FY) 2003, resulting in over 130 distinct products, most of which have transitioned to either hardware acquisition programs of record or integrated with current operational software systems (such as Global Command and Control System (GCCS) and Global Combat Support System (GCSS)). In addition, the majority of ACTD products 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, products from more than thirty ACTDs have been employed in support of Operations Enduring Freedom, Iraqi Freedom and Noble Eagle. ACTDs have also been employed in support of Homeland Security and Homeland Defense operations.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 3 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATION (PE 0603750D8Z)	

B. Program Change Summary

PE: 0603750D8Z	FY 2003	FY 2004	FY 2005
Previous President's Budget	200.881	213.361	214.183
Current FY 2005 President's Budget	195.136	218.167	213.901
Total Adjustments:	-5.745	+4.806	-0.282
Congressional Program Reductions		-3.244	
Congressional rescissions			
Congressional increases		+10.150	
Reprogrammings	-1.700	-2.100	
SBIR/SSTR Transfer	-3.761		
Other	-0.284		-0.282

C. Other Program Funding Summary: N/A

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

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

The Science and Technology (S&T) and operational communities submit ACTDs to DUSD (AS&C) each year for consideration. The community includes the military Services, Combatant Commanders, and the defense industry. Coalition partners can also submit ACTD candidates to be considered during the annual review cycle. The candidates proposed by the S&T community reflect technological opportunities enabled by recently demonstrated

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 5 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

mature 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. For FY-2005, candidates will be organized into the JCIDS operational areas of Battlespace Awareness and Intelligence, Command and Control, Force Application, Protection and Focused Logistics.

The maturity of the technology and relevant need of the proposed capability is assessed by the DUSD (AS&C) with assistance from senior members of the S & T and operational communities. This forum has historically been referred to as the "Breakfast Club." The proposed ACTD candidates are then ranked by the military Services and Combatant Commanders, then forwarded to DUSD (AS&C) who brings the ranked candidates to the Joint Requirements Oversight Council (JROC) for further prioritization and validation. The 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 (ID), Management Plan (MP) and the Transition Plan (TP). Each approved ACTD will be described in these top-level documents which provides details of the demonstration/evaluation, the main objectives, approach, critical events, measures of success, transition options, participants, schedule, and funding. The review of ACTD proposals for initiation in FY 2004 began in January 2003. Fourteen ACTD candidates were prioritized and validated by the JROC and were included in the ACTD Congressional Report forwarded in October 2004 to the congressional defense committees. Funding for new FY 2004 ACTDs, including potential midyear starts, is approximately \$40 million.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 6 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

The typical timeline of one-to-three years for the operational demonstration phase of an ACTD is compressed compared to normal acquisition timelines for fielding an operational capability. Executives and managers for ACTD projects are encouraged to "spiral out" proven elements of ACTDs with interim Military Utility Assessments (MUAs) that permit rapid technology transition during the course of the demonstration rather than awaiting demonstration completion to transition technologies to acquisition and sustainment programs of record. 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, return the technology to the research and development technology base for further maturation, or not to pursue the technology any further. In cases where the operational user is satisfied the prototype has significant military 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. Each of the ACTD project summaries which are detailed in the R-2a submission includes reference to the year of final demonstration and the year of completion (if occurring in the FY03 - FY05 timeframe). The final demonstration concludes the operational demonstration phase and is the basis for the military utility assessment. In most cases, a residual support/pre-transition phase (sometimes used for extended user evaluation) follows. After the residual phase (if one is required), the ACTD is defined as being complete. Completion assumes no further program resources will be expended by any participating ACTD project partner.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 7 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

B. PROGRAM ACCOMPLISHMENTS AND PLANS - FY 2003 THROUGH FY 2005:

FY 2003 General Program Accomplishments

Advanced Systems and Concepts (AS&C) strengthened ties for cooperative ACTD programs with countries closely supporting the United States in Operations ENDURING FREEDOM and IRAQI FREEDOM. Significantly, Australia and the United Kingdom expressed commitment to expanding integration of efforts with programs that closely parallel the ACTD model.

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

The close collaboration between AS&C and Combatant Commanders conferred a relevance to ACTD projects confirmed by requirements emerging from the Global War on Terrorism. In many cases, management teams formed to execute ACTDs were tapped to accelerate fielding of technologies to defeat emergent terrorist threats. These management teams and ACTD-based technologist networks played a leading role in feeding solutions to the Combating Terrorism Technology Task Force (CTTTF) led by Director, Defense Research and Engineering (DDR&E). An AS&C oversight executive for ACTDs was tapped to serve as the CTTTF Chairman

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 8 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

reporting to DDR&E. ACTD management teams generating rapid-response technologies and TTPs included many ACTDs: Thermobarics, Counter-Bomb/Counter Bomber (CB/CB), Military Operations in Urban Terrain (MOUT), Joint Blue Force Situational Awareness (JBFSA), Adaptive Joint C4ISR Node (AJCN), Deployable Cargo Screening, Night Vision Cave & Urban Assault, Overwatch, Theater Support Vessel, Tunnel Target Defeat, Urban Recon, Active Denial System, Agent Defeat Warhead, Contamination Avoidance at Seaports of Debarkation, Expendable Unmanned Aerial Vehicle, Joint Explosive Ordnance Disposal, Language and Speech Exploitation Resources, Pathfinder, SPARTAN, Adaptive Battlespace Awareness, Area Cruise Missile Defense, Coalition Theater Logistics, and Joint Area Clearance.

Twelve ACTDs were completed in Fiscal Year 2003. 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 Iraqi Freedom, as well as Homeland Security/Homeland Defense operations. Fourteen new ACTDs were started in FY 2003 (see specific accomplishments below): Adaptive Joint C4ISR, Deployable Cargo Screening, Counter Bomb/Counter Bomber, Foliage Penetration Synthetic Aperture Radar, Gridlock (Precision Engagement), High Altitude Airship, Joint Blue Force Situational Awareness, Midnight Stand, Night Vision cave and Urban Assault, Overwatch, Tactical IFSAR Mapping, Theater Support Vessel, Tunnel Target Defeat, Urban Recon.

The data call for FY 2004 ACTDs began during the 1st Quarter of Fiscal Year 2003. Thirty-one ACTD candidates, of the one hundred and eighteen received from the Unified Combatant Commands, the Services, Defense agencies and industry, were considered for final selection. Candidates covered a broad range of technologies and needs, prominently

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 9 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

including the Global War on Terrorism, network-centric warfare, adaptive combat logistics support, coordination of coalition logistics, future energy-efficient ground transportation technologies, expanded employment of unmanned vehicles, signals intelligence for special operations units, expanded capabilities for psychological operations, and computer tools to enable effects-based operations. These candidates were screened for technical maturity, operational relevance and transition potential by the "Breakfast Club" and prioritized by each of the Combatant Commands and Services. The JROC then completed final prioritization, validating military requirements for 14 candidates. Based upon funding availability, 13 new ACTDs were selected to start in FY 2004 (see specific details below).

The ACTD budget request for FY 2003 totaled \$200.881 million. Congress added an additional \$8.3million for three initiatives: 1) An additional \$3.0 million for the Homeland Security Command & Control (HLSC2) ACTD; 2) \$2.5 million to pursue a non-ACTD demonstration of a Portable Radiation Search Tool (PRST); and 3) \$2.8M for the Secure Hardware Data Encryption Device (Secured) project. The Current FY 2003 estimate is \$195.136 million.

FY 2004 and FY 2005 General Program Plans:

AS&C will continue the process of transitioning and initiating ACTDs. Emphasis for the FY 2004 ACTDs continued to be placed on serving the unique requirements of joint Combatant Commanders, with coalition and transformational aspects highlighted as "value added" attributes of new and continuing demonstrations. As in FY 2003, a strong commitment to early and aggressive transition management will aim to sustain the capabilities successfully demonstrated in ACTDs.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 10 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

Exploration of new coalition partnership agreements and integration of efforts with the Joint Staff JCIDS process will characterize ACTD staff support efforts. As noted earlier, thirteen FY 2004 ACTDs were approved to start this year. These ACTDs are Advanced Tactical Targeting Technology, Agile Rapid Global Combat Support, Coalition Reception Staging and Onward Movement, Coalition Shared Intelligence Network Environment, Future Tactical Truck System, Joint Precision Airdrop System, Joint Unmanned System Common Control, Man-Portable Threat Warning System, Multi-Sensor Aerospace/Ground Joint ISR Interoperability Coalition, Psychological Operations (PSYOP) Global Reach, Theater Effects-Based Operations and a classified demonstration. Protected Take-Off and Landing (PLATO) is validated, with execution held in abeyance pending decisions on coordinated MANPADs countermeasure efforts by the Department of Defense and the Department of Homeland Security. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Nominations of proposed FY 2005 ACTDs were received in January 2004, with proposal staffing and refinement continuing through February 2004. Funding will continue in FY 2004 for active ACTDs initiated in Fiscal Years 1997 through 2003 that have not been completed or transitioned to acquisition programs. In FY 2004, Congress added \$10.150 to ACTDs and joint enabling technologies that hold promise for break-through technologies, including continuing the Syntroleum technology initiative (Flexible JP-8 Pilot Plant) and the Joint Norwegian ISSP technologies. Funding for the new FY 2004 ACTDs, including potential midyear starts, is approximately \$40 million.

Funding will continue in FY 2005 for active ACTDs initiated in Fiscal Years 2000 through 2004 that have not been completed or transitioned to acquisition programs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Funding available for initiating new FY 2005 ACTDs will be approximately \$45 million. (Total ACTD funding in FY05: \$213.901 million).

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 11 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

ACTD Direct Program Support: Last year's FY 2004 budget submission contained three new budget lines broken-out from the specific ACTDs projects. The direct funding line is used to provide support for the entire ACTD program (versus individual ACTDs). These three budget lines include (1) Unified Combatant Commander; (2) ACTD Pre-Transition Support; and (3) Interagency Classified Projects. A fourth line is included in this budget submission to highlight joint enabling technologies that are either directed by congress or initiated by AS&C.

- 1) **Unified Combatant Commander (UCC) Direct Support:** The UCC's play an essential role in the selection, validation, demonstration, and transition of ACTDs. Many ACTDs have funding allocated for the UCCs from within their specific program funding lines. Additionally, in previous years 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). In fact, two new FY 2004 ACTDs were submitted by NATO organizations and were approved to start this year. Due to this critical warfighter role and increased coalition potential, the direct ACTD support was formalized in the ACTD budget submission. UCC direct program funding is estimated between \$3.0 and \$4.0 million per year.

- 2) **ACTD Pre-Transition Support:** The ACTD program has been highly successful in rapidly developing and demonstrating new technologies and complementary concepts of operations for the warfighter. In order to successfully transition more ACTDs to the warfighter, the SECDEF established the goal of increasing the number of ACTDs evolving into formal acquisition programs. In order to enhance this transition

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 12 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

effort, the ACTD program has created a pre-transition support line as highlighted in the FY 2004 budget submission. FY04 and FY05 funding is estimated at \$3.0 million per year for pre-transition initiatives.

3) Interagency Classified Support for ACTDs: ACTDs also support a limited number of classified efforts which are coordinated with other agencies and detailed in separate DoD budget exhibits. FY04 and FY05 funding for this direct program support is estimated at \$9.0 million each year.

4) Joint Enabling Technologies: Over the past several years congressional committees have highlighted the potential of mature, joint technologies and provided resources to the ACTD program to investigate the potential for military utility. AS&C also becomes aware of promising technologies which may have transformational application to ACTDs. These technologies may be uncovered during a ACTDs final demonstration, and usually have broader application across several functional capabilities addressed by various ACTDs. Four enabling technologies are highlighted in this year's budget submission:

	FY 2003	FY 2004	FY 2005
Rosetta STONE	1.0	3.0	2.0

Rosetta STONE (Single integrated picture Topology-driven Optical Nonlinear Engine-SIP-STONE) is a promising joint enabling technology. The Department will develop this enabling technology capable of integrating multi-source sensor data/track inputs from all available sources, correlating the data and fusing it into a single integrated picture. The technology combines the Rosetta gateway technology from the LINK 16 ACTD (1999) that enables multi-datalink translation and forwarding of data with the STONE optical

UNCLASSIFIED

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

correlator to provide near real-time fusion, sensor registration and correlation of information sources. The overall objective is to reduce engagement decision time, improve target location estimates, and provide enhanced combat identification (CID) from disparate sensors.

- **FY 2003** - Participated in JCIET/JCIDEX 2003 to further demonstrate Rosetta gateway capabilities and begin algorithm development for the STONE correlator with a few information sources.
- **FY 2004** - Further STONE algorithm development with increased number of sensor information sources. Participate and demonstrate expanded capability in JEFX 2004 at Nellis AFB NV.
- **FY 2005** - Operational demonstration of Rosetta STONE full capability at demonstration site TBD.

	FY 2003	FY 2004
Secure Hardware Data Encryption Device (Secured)	2.8	2.4

Congress provided additional resources in FY 2003 and FY 2004 for the Secure Hardware Data Encryption Device (Secured) project. The Department will develop an enabling capability to insert encryption methods to protect information at rest by interrupting the data bus to hard disk drive path within the computer, improving operational security in the event of lost or overrun computer assets.

- **FY 2003** - Developed hardware and software integration in a laboratory breadboard implementation to demonstrate the concepts for hard disk data encryption. Defined user security profile and began certification process.
- **FY 2004** - Complete the U.S./European certification process, present the product to potential DoD and other federal government agencies using reality based operational

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 14 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

scenarios, and continue the design and development of Secured to expand functional capabilities and applicability to new target platforms.

	FY 2003	FY 2004
Remote Unattended Sensing System (RUSS)	0	2.1

Congress provided additional resources in FY 2004 for the Remote Unattended Sensing System (RUSS).

- **FY 2004** - Support the Pacific Area Bio Ops Project to develop Bio Defense Capabilities through the Chemical Biological Radiological Technology Alliance (CBRTA). Develop urban unattended ground sensors, in conjunction with CBRTA, to support the Night Vision Cave and Urban Assault ACTD.

	FY 2003	FY 2004
JP-8 Pilot Program	0	2.0

Congress provided additional resources in FY 2002 (\$3.5M) and again in FY 2004 for the syntroleum technology JP-8 Pilot Program.

- **FY 2003** - Developed a preliminary marine and chemical engineering design for a barge-mounted plant to produce synthetic JP-8/JP-5 from natural gas using Gas-to-Liquids (GTL) technology and Fischer-Tropsch (F-T) synthesis. This design achieves a production capability of 567,000 gallons (~13,500 barrels) per day of JP-5 fuel and fuel storage capability of up to 2 million gallons. This plant, as currently designed, will be totally self-contained and will operate in sea state 3 conditions. Initial estimates state that this fuel can be delivered for approximately \$1.20 per gallon. Completed a Military Utility Assessment (MUA) to determine the true benefits to the military of the barge-mounted synthetic fuel plant concept. This assessment found that the gas-to-liquids barge presents a viable complement to other bulk fuel sources,

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 15 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

improvements in supply chain efficiency across a spectrum of military operations, and cost savings and avoidance from reduced reliance on Navy Combat Logistics Fleet & Military Sealift Command charter tanker assets and related reductions in fuel consumption and charter-hire crewing costs. Developed a draft specification for synthetic JP-8/JP-5 fuel developed through a Joint Agency DoD-DoE research and testing program involving the Army, Air Force and Navy fuels labs, along with DoE's National Energy Technology Laboratory. This work was completed under a Memorandum of Agreement to conduct collaborative research and development in the assessment of alternative fuels, particularly synthetic fuel produced from GTL and F-T technology. This program provided approximately 900 gallons of synthetic JP-5 fuel produced for this effort.

- **FY 2004** - Optimize the hull design for the barge for reduced weight and cost of the hull while increasing storage capability. DoD and DoE labs will assess viability of the draft specification developed in FY03 by completing additional testing using a surrogate synthetic aromatic component and when available, fuel with the synthesized aromatic. Conduct a Military Utility Assessment for the modular synthetic fuels plant having a capability of providing fuel, power and water to forward-based forces. Continue development of a formulation for synthetic JP-8 / JP-5, expressed as a draft specification, which ensures the fully synthetic fuel is freely interchangeable with conventional fuel in the legacy fleets.

FY 2003 - 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 1997. Additionally, section "F" of this exhibit provides a resource summary of the entire ACTD program by ACTD year group.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 16 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

• **FY 1997 ACTDs**

	FY 2003	FY 2004	FY 2005
Counterproliferation II (CP II)	0	0	0

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

- **FY 2003** - Accomplished remaining Chemical Combat Assessment System (CCAS) verification testing and training and an operational demonstration. Prepared for CCAS residual transition and transition to acquisition. Completed Hard Target Smart Fuse (HTSF) sled testing. Completed BLU-116 Advanced Unitary Penetrator (AUP) sled testing and obtained target response data from tests of the AUP against hardened, simulated weapons of mass destruction (WMD) facility. Executed final two ACTD operational demonstrations using a hardened, cut-and-cover simulated chemical production and storage facility and the Tomahawk Tactical Penetrator Variant (TTPV), CCAS and ITPTS Version 2 ACTD products. Executed one final operational demonstration of AGM-86D CALCM penetrator against a hardened, simulated chemical production facility using fully functional HTSF. Performed MUAs on the TTPV, CCAS and Integrated Target Planning Tool Set (ITPTS). Produced four CCAS ACTD-residual modification kits. Completed the interim capability support phase, the final military utility assessment (MUA) test and demonstration of the ACTD.
- **FY 2004** - Conduct Extended user evaluation by USEUCOM of the CPII residuals. Complete the final written MUA report based on tests completed in FY 2003. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 17 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Extending the Littoral Battlespace/JTF Warnet (ELB/JTFW)	13.800	0	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 2003** - Completed ELB / JTFW sub-system level and system level tests, 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. Completed operational personnel training, Hawaii and Japan regional tests and a distributed pre-deployment exercise in preparation for an early FY04 deployment culminating in COBRA GOLD 04. Completed development of CONOPs, TTPs and training package by operational forces. Transitioned technology to the Joint Tactical Radio System and over 20 programs of record. ACTD completed.

	FY 2003	FY 2004	FY 2005
Joint Advanced Health and Usage Monitoring System (JAHUMS)	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.

- **FY2003** - Completed installation of JAHUMS software/hardware on a 3rd Navy SH-60B helicopter at the Navy Helicopter Anti-Submarine Squadron Light (HSL-41), Naval Air Station, North Island, California; completed JAHUMS software for the Operational Test

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 18 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

(OT) phase of the IMD system; fielded two JAHUMS Integrate Support System prototypes for UH-60 Blackhawk helicopters at the Army 101st Airborne Division, Ft. Campbell, Kentucky which subsequently deployed with JAHUMS hardware to OIF in Iraq. Conducted developmental tests on an SH-60B helicopter with a real-time satellite based aircraft maintenance data link (a first for a DOD helicopter) and demonstrated an animated flight playback and pilot debrief capability.

- **FY 2004** - Conduct system training and operational fielding of JAHUMS technologies to units at the Navy HSL-41 squadron and at the Army 101st Airborne Division. Develop and refine the CONOPS for satellite data link utilization and a post-flight animation debrief, refine expert system diagnostics software, provide technical support to the units for maintenance, training and modifications. Maintenance and operations data for the military utility assessment will be collected and analyzed and JAHUMS technologies will be evaluated with regard to supporting the goal of a 50% reduction in mishaps and accidents as stated in Secretary Rumsfeld's "Reducing Preventable Accidents" Memorandum of May 2003. Complete the final demonstration.
- **FY 2005** - Conduct extended user evaluations at HSL-41 and at the 101st Airborne to refine system software. Support interim capability and conduct necessary modifications, testing and analysis to support transition to the Navy H-60R/S production line with the IMDS and to the UH-60M. End the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 19 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

• FY 1998 ACTDs

	FY 2003	FY 2004	FY 2005
Adaptive Course of Action (ACOA)	0	0	0

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

- FY 2003** - Completed transition of ACOA operations and maintenance responsibilities to Defense Information Systems Agency (DISA) into the Global Command and Control System (GCCS). Concluded interim capability support period and completed the ACTD.

	FY 2003	FY 2004	FY 2005
Line-of-Sight Anti-Tank (LOSAT)	0	0	0

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

- FY 2003** - Continued ballistic and guided missile flight tests at White Sands Missile Range (WSMR). Completed deployability assessment at Ft Bragg. The military utility assessment (MUA) was conducted at Eglin AFB. Field Tactical Trainer (FTT) Readiness was conducted. Transition Design Activities were completed and incorporated into ACTD prototypes for testing and demonstration. An extension to the LOSAT ACTD from FY 2003 to FY 2004 was approved due to operational sponsor diversion of current real world operations.
- FY 2004** - Continue ballistic and guided missile flight tests. Transition production activities in process for FY04 production award. The first period of operational testing is planned. Limited Rate Initial Production award is planned following

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 20 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

completion of operational testing. Complete the final demonstration and transition to the Army. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Theater Precision Strike Operations (TPSO)	0	0	0

Provide 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 2003** - Conclude the interim capability support phase and complete the ACTD. Transition the capabilities to programs of record. 1,000 ADOCS employed worldwide and used extensively in Operation Iraqi Freedom.

• FY 1999 ACTDs

	FY 2003	FY 2004	FY 2005
Battle Damage Assessment in the Joint Targeting Toolbox (BDA in JTT)	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 2003** - Concluded interim capability support phase and completed the ACTD.

	FY 2003	FY 2004	FY 2005
Coherent Analytical Computing Environment (CACE)	0.400	0	0

Demonstrate advanced data warehousing concepts, on-line analytical processing decision

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

support, and intelligent analytical computing tools to access and utilize joint aviation asset information.

- **FY 2003** - CACE tools used successfully during Operation Iraqi Freedom (OIF). Limited Military Utility Assessment (LMUA) and final demonstration completed; CACE judged to have military utility. LMUA limited due to OIF deployment of a significant portion of the assessment squadron. Implemented residual support for MAG-13 and detachments. Developed final CONOPS and continued transition planning. Chosen for follow-on R&D by ONR as the CARTE project which includes a signed Technology Transition Agreement with Joint Strike Fighter/Lockheed Martin Autonomic Logistics Information System (ALIS).
- **FY 2004** - Continue to refine, update and install the CACE residual tools. Complete the transition plan. Begin transition to an acquisition program. Continue residual support for MAG-13 and detachments. Support the JSF LM ALIS PDR. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Common Spectral MASINT Exploitation Capability (COSMEC)	0	0	0

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

- **FY 2003** - Transitioned software to the Digital Common Ground Station (DCGS) and the Joint Intelligence Center. Concluded the interim capability support period and completed the ACTD.

	FY 2003	FY 2004	FY 2005
Compact Environment Anomaly Sensor II (CEASE II)	0.100	0	0

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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 22 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2003** - Concluded interim capability support phase and completed the ACTD. System is onboard DSP 21 ready for operational users. Also used commercially for Spacebus 4000 communication satellites.

	FY 2003	FY 2004	FY 2005
Force Medical Protection/Dosimeter (FMP/D)	0	0	0

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

- **FY 2003** - Completed test and evaluation of improved active, alarming chemical threat air sampler. Completed the ACTD.

	FY 2003	FY 2004	FY 2005
Human Intelligence and Counterintelligence Support Tools (HICIST)	1.700	0	0

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

- **FY 2003** - Completed extended user evaluations and transitioned ACTD products to programs of record. In response to the Global War on Terrorism, fielded initial capabilities to forces in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF). HICIST products for weapons of mass destruction analysis were accelerated for use in Operation Iraqi Freedom. A HICIST product providing a deployable biometrics identification system was accelerated for fielding to intelligence forces performing interrogations of suspects and enemy combatants in OIF, OEF and Camp X-Ray. Completed the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 23 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Joint Medical Operations - Telemedicine (JMO-T)	0	0	0

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

- **FY 2003** - Refined logistical support concepts and operational tactics, techniques and procedures (TTP). Completed extended user evaluation and final MUA including findings from the extended user evaluations. Transitioned JMO-T products to the OSD Health Affairs program of record - Theater Medical Information Program (TMIP). At the Secretary of Defense's request, some JMOT-assessed capabilities accelerated for fielding in Operation Iraqi Freedom, as the Interim TMIP. Completed the ACTD.

	FY 2003	FY 2004	FY 2005
Joint Theater Logistics (JTL)	0	0	0

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

- **FY 2003** - Commenced pilot services at DISA AITS-JPO. Residual products (software, source code, training materials, and limited hardware) began transfer to the DISA AITS-JPO for transition to the Global Combat Support System (GCSS).
- **FY 2004** - Complete transition of JTL products to the GCSS. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Theater Air and Missile Defense Interoperability (TAMDI)	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.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 24 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2003** - Conclude interim capability support phase and completed the ACTD. Transitioned to Patriot/Aegis Cooperative Engagement Capability (CEC) targeting capability and to the Korean Theater Integrated Air Picture for U.S. Forces Korea.

• FY 2000 ACTDs

	FY 2003	FY 2004	FY 2005
Coalition Aerial Surveillance and Reconnaissance	2.400	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 2003** - Conducted a military utility assessment in a simulated exercise with live feeds from distributed sensors. Produced measures of performance/effectiveness analysis. Began 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. Transition responsibility for NATO Command, Control and Communications Agency (NC3A) testbed functions to Allied Command Transformation (ACT). 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)). Complete the final demonstration.

UNCLASSIFIED

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** - Conduct final live-fly exercise in US and utility assessments. Conclude the interim capability support phase and complete the ACTD.

	FY 2003	FY 2004	FY 2005
CINC 21	6.000	1.500	0.400

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

- **FY 2003** - Conducted Military Utility Assessment during Terminal Fury 03 at PACOM. Conducted Extended User Evaluation of residual capability at PACOM and STRATCOM. Continued to work transition to next-generation of GCCS and DJC2. Continued development of CONOPS, TTPs to mesh with standing joint force headquarters (SJFHQ) evolving concepts and development of training package. Ensured decision-focused C2 capability supports all Combatant Commands. Worked scalability/software refresh issues.
- **FY 2004** - Complete Extended User Evaluation at Pacific Command (PACOM) and Strategic Command (STRATCOM). Install and support CINC 21 capability in European Command (EUCOM). 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). CINC21 capability being incorporated into STRATCOM program called D-Side to support National and Strategic Planning for Global Strike. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 26 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Communication/Navigation Outage Forecasting System (C/NOFS)	2.000	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 2003** - Conducted payload test, spacecraft integration and launch vehicle integration. Continued Scintillation Network Decision Aid (SCINDA) assessments and user evaluation.
- **FY 2004** - Continue conducting payload test, spacecraft integration and launch vehicle integration, SCINDA assessments, and user evaluation. Complete final demonstration.
- **FY 2005** - Launch spacecraft, conduct on-orbit checkout, enter survey and forecasting modes with limited operational use. Continue survey and forecasting modes, perform extended user evaluation.

	FY 2003	FY 2004	FY 2005
Computerized Operational MASINT Weather (ComWX)	1.200	0	0

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

- **FY 2003** - Completed dissemination architecture for rapid dissemination of data to theater. Implemented suggested improvements to algorithms as a result of operational demos in FY02/03. Conducted formal military utility assessment (MUA). Produced/coordinated CONOPS and future sensor requirements.
- **FY 2004** - Coordinate CONOPS and future sensor requirements with additional commands. Operations and maintenance for ACTD infrastructure developed. Extension of effort under consideration due to new operational needs, otherwise complete the final demonstration.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 27 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Content-Based Information Security (CBIS)	0	0	0

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

- **FY 2003** - Continued contracting efforts to develop a Type 1 cryptographic device prototype. Drafted systems and security engineering specification. Began prototyping, certification and incremental product delivery. Developed plan for FY04 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 preliminary military utility assessment in conjunction with Coalition exercise and Standing Joint Force Headquarters prototype testing. Prepare for hand-off of certified residual devices to transition manager and deployment authority for implementation on DoD and Coalition networks.
- **FY 2005** - Finalize transition to NSA initial operating capability product line. Commence delivery of certified Type 1 multi-security enclave encryption devices to Regional Combatant Commanders for use in joint, interagency and coalition networks. Complete the final demonstration and the ACTD.

	FY 2003	FY 2004	FY 2005
Global Monitoring of ISR Space Systems (GMSIS)	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 2003** - System development completed and military utility of interim system demonstrate. Limited operations initiated.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 28 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2004** - Complete demonstration of the military utility of the interim system. Continue limited operations. Complete the final demonstration and ACTD.

	FY 2003	FY 2004	FY 2005
Joint Intelligence, Surveillance and Reconnaissance (JISR)	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 2003** - Refined and enhanced JISR interfaces to source systems based upon user defined TTP/CONOPS (Lucky Sentinel 03, MEFEX 03, Ulchi Focus Lens 03). Integrated and fielded JISR prototype into Army Brigade evaluation. Continued 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. Planned and executed 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 USCENTCOM and I MEF.
- **FY 2004** - Complete final assessment of military utility, operational effectiveness, suitability, and interoperability during demonstration to include Defense Information Infrastructure/ Common Operating Environment (DII/COE) certification. Transition Memoranda of Agreement will be executed with proposed programs executive officer's (PEO's) with responsibilities for programs of record. Review and approve 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 FY04. Complete the final demonstration and the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 29 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Ground-To-Air Passive Surveillance (GAPS)	1.200	0	0

Evaluate passive surveillance systems for counterdrug operations for JIATF-S and SOUTHCOM.

- **FY 2003** - Exercised 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. Assessed corrections to minor problems discovered during previous demonstrations and tests. Completed MUA of passive coherent location (PCL) technology. The assessment includes operational user training and support. Maximum use of Joint exercises and tests was used as part of the operational assessment.
- **FY 2004** - Complete planning to insure successful transition 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 system. This will be used to assess the life cycle costs. Complete the final demonstration and provide final assessment reports. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Multiple Link Antenna System (MLAS)	3.900	0	0

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

- **FY 2003** - Commenced proof of concept demonstration preparations. Refined and updated antenna application to operational concepts, CONOPS and network procedures within an Army operational venue in pursuit of follow-on Joint Warfighter Exercise opportunity. Prepare for transition to acquisition activity. Prepared demonstration analysis and findings. Operational considerations (Warfighter engagement in real world operations) deferred demonstration/evaluation to FY2004.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 30 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2004** - Conduct extended user evaluation and further CONOPS development. Prepare MLAS transition. Complete the final demonstration and the ACTD.

	FY 2003	FY 2004	FY 2005
Quick Bolt (QB)	5.800	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. Provides a significant increase in Kill Probability of legacy missile.

- **FY 2003** - Completed captive and live-fire flight testing. Details of QB-1 and QB-2 missile firings are classified. Both shots were successful. QB-3 (additional firing) was deferred due to lack of funding. Completed the final demonstration.
- **FY 2004** - Commence interim capability support phase. Provide captive inert training missile capability with Embedded National Tactical Receiver (ENTR) for use with Advanced Anti-Radiation Guided Missile (AARGM) capability and Weapons Data Link Battle Damage Assessment (BDA) capability.
- **FY 2005** - Conclude interim capability support phase and complete the ACTD. Ensure System Development & Demonstration (SD&D) phase is supported by ACTD MUA and technical findings.

	FY 2003	FY 2004	FY 2005
Restoration of Operations (RestOps)	1.700	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 port, airfield or logistics facility.

- **FY 2003** - Conducted final demonstrations and utility assessments at Osan Airbase, Korea, and Dugway Proving Grounds, Utah. Enhanced RestOps capabilities from the

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 31 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

baseline systems and based on findings from preliminary demonstrations. Continued user training. Revised concept of operations.

- **FY 2004** - Publish final report. Transition technology and lessons learned. Conduct residual training and support.
- **FY 2005** - Conclude interim capability support phase to complete the ACTD.

	FY 2003	FY 2004	FY 2005
Tri-Band Antenna Signal Combiner (TASC)	0	0	0

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

- **FY 2003** - Complete Military Utility Assessment. Transition interim capability support to acquisition and complete the ACTD.

• FY 2001 ACTDs

	FY 2003	FY 2004	FY 2005
Active Network Intrusion Defense (ANID)	1.800	1.900	1.200

Demonstrate a capability to respond in real-time to network intrusions by making changes to network devices like routers, firewalls, intrusions sensors ...

- **FY 2003** - Transitioned Operational Manager responsibility from US Space Command to US Strategic Command. Demonstrated 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. Demonstrated local environment correlation, analysis and visualization capabilities. Completed and demonstrated Spirals 1, 2 and 2.5. The Joint Intelligence Operations

UNCLASSIFIED

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

Center (JIOC) reviewed the system. Deployed spiral 2 to several CONUS and OCONUS sites for JWID 03.

- **FY 2004** - Conclude the development of ANID and begin transition efforts. Add the following functionality: Enterprise Messaging, Survivability, Autonomic Response, Enterprise Correlation, Security, and Visualization Enhancements to enable managers to share data; quickly recognize and resolve major cyber attacks; continue functions when despite a cyber attack environment; react and contain certain attacks without human intervention. Conduct Military Utility Assessment (MUA). Deploy ANID Build 3 to prototype sites at JFCOM, STRATCOM, ARSTRAT, and JIOC, including upgrade from prior version at JFCOM and STRATCOM. Complete CONOPS, Tactics, Techniques and Procedures development and documentation.
- **FY 2005** -. Complete final report on military utility. Transition software tools and modules to DISA Information Assurance services. Complete the final demonstration and the ACTD.

	FY 2003	FY 2004	FY 2005
Adaptive Battlespace Awareness (ABA)	3.400	1.8 00	1.200

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

- **FY 2003** - Developed task-driven, automated, relevance-based information profiles for smart "push/pull" relevance-based dissemination in time-critical decision making. Demonstrated further enhancements in EUCOM area of responsibility. Evaluated spiral upgrade assessment by extended user evaluation sites. Initiated Military Utility Assessment (MUA) 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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 33 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

concept of operations. Begin implementation of transition plan. Review ABA adoption by other combatant commanders. Complete the final demonstration.

- **FY 2005** - Complete final MUA, incorporating extended user evaluations of residuals. Finalize concept of operations. Execute plan for transitioning ABA into GCCS-I3. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Advanced Tactical Laser (ATL)	5.800	5.800	3.500

Integrate a moderate power laser, uncoiled optics, and existing fire-control systems onboard a C-130 aircraft.

- **FY 2003** - Continued development of the ATL ACTD system. Initial efforts at the start of the fiscal year focused on completion of the SBR, in Dec 02. The SBR established the technical baseline for the ATL system, allowing us to allocate performance requirements and system integration constraints to the various ATL ACTD system components. Design was begun for the laser device system hardware (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. A Preliminary Design Review (PDR) of the ATL hardware and software was conducted in the fourth quarter. This intermediate review verified the subsystem components and requirements allocations will allow the ATL system to continue to meet program objectives. Extensive work is being 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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 34 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

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**-This year's effort is devoted to integrating and testing the weapon on a C-130 aircraft under controlled conditions. It includes integrating the tactical laser onto C-130 aircraft, verifying turret, beam control, and laser spot size during flying missions; and developing crew work stations for acquisition and firing. Final activity centers around flying tests against AFSOC designated targets. In addition the ACTD will continue to refine lethality data against a variety of targets, for future reference.

	FY 2003	FY 2004	FY 2005
Advanced Technology Ordnance Surveillance (ATOS)	0.700	0.700	0.800

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

- **FY 2003** - Produced 1,000 tags for operational demonstrations and military utility assessments and implemented redesign of handheld reader for optimal operation use.
- **FY 2004** - Conduct field demonstrations and complete the Military Utility Assessment (MUA); commence integration into ammunition management systems of services opting for Advanced Technology Ordnance Surveillance (ATOS) integration; conduct site surveys and system installation planning; incorporate any design improvements identified during MUA; maintain residual ATOS system used in final demonstration by European Command (EUCOM).
- **FY 2005** - Complete service integration, continue installation planning and commence full-scale system integration. Replace residual ATOS system used in final demonstration by USEUCOM. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 35 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Area Cruise Missile Defense (ACMD)	1.800	0	0

Initially chosen as an ACTD to demonstrate technology that will provide surge response to cruise missile attacks and low flying unidentified air threats. ACMD integrates various agency air-tracking sensors and facilitates a real-time response through the North American Air Defense Command channels. Technology proved to provide an excellent air-tracking coordination tool. ACMD was accelerated into operations due to real world events beginning with the 9-11 terrorist attacks. Technology demonstrated in the ACMD ACTD plays an important role today protecting the National Capital Region (NCR).

- **FY 2003** - Conducted the Joint-Based Expeditionary Command and Control Center (JBECC)-Rapid Deployment Demonstration (#3). Served as the final demonstration for the military utility assessment (MUA). 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. Continue support of Operation NOBLE EAGLE. Provided presidential support during deployments of Air Force One to various CONUS locations.
- **FY 2004** - Complete transition and conclude interim capability support phase. Continue to provide real world support in the Continental United States (CONUS). Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Coalition Combat Identification (CCID)	5.800	4.600	3.100

CCID is demonstrating and transitioning CID solutions that significantly reduce fratricide and enhance combat effectiveness of allied and coalition forces operating in both traditional and ad-hoc coalitions.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 36 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- FY 2003 - Continued Radio Based Combat Identification (RBCI) improvements for U.S. and exportable radios. Initiated integration of RBCI interface functionality into Apache helicopter and Personal Forward Entry Device (PFED) for dismounted Forward Observers. Completed development of Battlefield Target Identification Device (BTID) Standard Agreement (STANAG)- compliant systems, developed STANAG test plan in conjunction with NATO allies and conducted successful technical and interoperability testing with UK and French BTIDs. Conducted multinational Military Operations in Urban Terrain (MOUT) exercise to evaluate the military utility of Dismounted Soldier Identification Devices (DSID) in urban warfare; the Joint Combat Identification and Experimentation Team (JCIET) assessed technologies, CONOPS and TTPs and generated a final report. Continued coordination on potential allied CCID exercises. Initiated the development of a Virtual - Simulation Operational Exercise with CCID technologies and Allies. Continued development of CONOPS, TTPs for the various mission areas. Continued DSID STANAG development.
- **FY 2004** - Complete RBCI improvements for ground responders and helicopter, Forward Observer / Forward Air Controller and Beyond Line of Sight (BLOS) interrogators. Technically test RBCI to insure specification compliance and operationally demonstrate in CJFTEX-04 and C4ISR On the Move exercises. Provide RBCI capability to infantry battalion during deployment to Operation Iraqi Freedom (OIF) for use and assessment. Initiate feasibility study of integrating RBCI into United Kingdom BOWMAN radio; technically test interoperability in VHF voice mode. Continue BTID technical interoperability testing with UK, France and Germany and begin operational demonstrations of the BTID during CJFTEX-04 and C4ISR On the Move exercises. Begin evaluation of Radio Frequency Tags and RBCI for use in Fixed Wing to Ground Close Air Support applications. Continue coordination for allied CCID exercises in 2005. Finalize setup of Virtual - Simulation Operational Exercise with CCID technologies and

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 37 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

Allies; begin experiments. Implement and continue to refine CONOPs / TTPs in operational CCID exercises and virtual experiments. Begin warfighter evaluation of NATO BTID and RBCI.

- **FY 2005** - Joint Interoperability Test Command (JITC) will conduct an interoperability test of RBCI, SINCGARS radios and fielded Situational Awareness systems to insure compatibility and interoperability. The ACTD will implement and refine CONOPs and TTPs and complete the Warfighter evaluation of the NATO BTID, RBCI and DSID during the FY05 multinational operational demo and assessment; analyze data from the Warfighter evaluation; and execute the CCID transition plan for Extended User Evaluation and production and fielding. Complete the final demonstration.

	FY 2003	FY 2004	FY 2005
Coalition Theater Logistics (CTL)	0.300	2.300	0

Integrate logistics information and combat support tools among coalition forces.

- **FY 2003** - Demonstrated the second objective (plan and execute supply and sustainment) during Cobra Gold 03. Continued to refine first objective (plan and execute strategic deployment and redeployment). Continued interim Military Utility Assessment (MUA). Prepared for final Military Utility Assessment in FY 2004. Refined transition plans to the Global Combat Support System (GCSS).
- **FY 2004** - Integrate capabilities to support combatant commands within the architecture framework. Complete all technical testing and integration. Conduct the final demonstration and MUA. Coordinate GCSS transition plans, begin transition and prepare to field residual capabilities.
- **FY 2005** - Continue to harden and expand focused logistics/operations shared view and transition to GCSS. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 38 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Hunter Standoff Killer Team (HSKT)	8.400	6.300	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 2003** - Awarded contract to integrate TCDL and precision targeting sensor on one (1) Hunter UAV which will yield the only Army UAV possessing precision targeting sensor with laser designation capability. Completed two (2) software builds for Mobile Commander's Associate (MCA) and one (1) software build for Warfighter Associate (WA). Completed A2C2S / MCA simulator assembly and conducted simulation tests of the first MCA build. Continued manned / unmanned teaming simulations and continued development of tactics, techniques, and procedures (TTPs). Completed Integrated Assessment Plan (IAP). Integrated TCDL into one Hunter UAV system. Completed hardware in the loop integration bench tests of the first MCA A2C2S and continued hardware in the loop integration bench tests of the WA Longbow Apache system. Continued integration on the Army first A2C2S helicopters. Initiated development of HSKT operational training plan and continued development of training materials for WA and MCA.
- **FY 2004** - Award contract to integrate TCDL and precision targeting sensor on UAV. Complete final software builds for Mobile Commander's Associate (MCA) and Warfighter Associate (WA), and simulation tests for MCA, WA, and F/A-18. Complete integration of Hunter UAV precision targeting sensor with laser designation capability, and initiate UAV integrated TCDL / sensor control testing. Complete manned / unmanned teaming simulation and continue developing tactics, techniques, and procedures (TTPs). Complete integration of A2C2S MCA with LINK-16, and AH-64 WA Longbow Apache integration flight vehicles for use in manned / unmanned team testing. Complete all hardware in the loop integration tests of the MCA A2C2S with LINK-16 and the WA Longbow Apache

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 39 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

systems. Continue development of CONOPs, TTPs and training package. Complete development of HSKT operational training plan and continue development of HSKT exportable training package to be used by HSKT operational pilots and operators.

- **FY 2005** - Complete HSKT team test and evaluations and install hardware and software into production AH-64 D aircraft. Complete development of CONOPS, TTPs and warfighter training for Joint Military Utility Assessment (JMUA) CONUS demonstrations. Conduct operational demonstrations (including final demonstration) as part of the Extended User Evaluation (EUE) and commence interim capability support phase. Initiate HSKT pre-production acquisition / fielding implementation pending successful JMUA.

	FY 2003	FY 2004	FY 2005
Joint Area Clearance (JAC)	1.500	1.100	0

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 2003** - Conducted two MUA demonstrations and developed an interim MUA. Completed Change Detection Workstation and conduct respective technical test and MUA demonstration for potential use in Operation Iraqi Freedom (OIF); continued transition planning continues.
- **FY 2004** - Continue efforts to deploy the Change Detection technology to real world operations in support of route clearance missions; conclude the MUA demonstration process with MUA III at Camp Lejeune, North Carolina in March 2004; prepare final MUA report and staff operational requirements for technology insertions into existing programs or new stand-alone requirements; and finalize requirements for ACTD products and prepare for transition to acquisition. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 40 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Loitering Electronic Warfare Killer (LEWK)	0.200	0.200	0

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

- **FY 2003** - Due to issues of technological maturity, this project was placed on hold in mid 2003 pending an Oversight Review Group (ORG) meeting. The ORG recommended the ACTD be concluded and the technology returned to the technical base for further development.
- **FY 2004** - Minimum close-out cost are estimated as this ACTD is concluded.

	FY 2003	FY 2004	FY 2005
Network-Centric Collaborative Targeting (NCCT)	5.800	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 2003** - Conducted additional Phase I demonstration to integrate precision targeting capabilities using existing data links and current TTPs. Initiated Phase II by integrating Phase I demonstration residuals into NCCT Core Technology Prototype development. Continued to develop Participant Integration Modules (PIM) for airborne platforms and ground stations. Continued to integrate NCCT Communications Equipment into the NCCT Prototype design.
- **FY 2004** - Conduct Spiral 2 Live-Fly Demo. Complete final demonstration and Military Utility Assessment. Commence interim capability support phase.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 41 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** - Transition Spiral 3 Live-Fly Demonstration at Roving Sands 05 to include all participants. Update interim MUA to final. Conclude interim capability support phase and complete the ACTD. Provide support to USAF for entering SD&D phase.

	FY 2003	FY 2004	FY 2005
Personnel Recovery Extraction Survivability Aided by Smart Sensors (PRESS)	5.800	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 2003** - Continued space hardware and miniature GPRS design and testing. Conducted initial integration design and preliminary testing of HH-60G Pavehawk extraction survivability sensors and suite. Developed demonstration and assessment plans, CONOPs, TTPs and training package for operational demonstrations and the Joint Military Utility Assessment. Fielded GPRS ground stations (3) and devices (3) with the 301st Rescue Squadron to support Operation Iraqi Freedom which reduced rescue response time by 90 minutes. Initiated acquisition and testing of Monocular Infrared (IR) Scope for survivor / evader.
- **FY 2004** -. Complete miniature GPRS design, fabrication and testing. Develop prototype space relay capability and test in high-altitude/tactical applications. Complete integration and testing of HH-60G Pavehawk survivability suite. Conduct technical and operational demonstrations (including the final demonstration) 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. Continue transition planning activities for follow-on warfighter acquisition of PRESS technologies

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 42 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** Continue evaluation of PRESS technologies during Extended User Evaluation of PRESS ACTD systems and technologies. Continue transition activities and initiate acquisition of PRESS ACTD systems and technologies for follow-on development, procurement and fielding based on successful JMUA. Finalize CONOPs, TTPs, training package and Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) recommendations.

	FY 2003	FY 2004	FY 2005
Tactical Missile System - Penetrator (TACMS-P)	10.900	0.600	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.

- **FY 2003** - Missile prepared for flight test. Additional resources shifted into TACMS-P to ensure timely testing of asset.
- **FY 2004** - Complete and evaluate flight testing and the final demonstration. Deploy residual weapons. Continue evaluation for consideration of a transition to programs of record. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Theater Integrated Planning Subsystem (TIPS)	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 2003** - Provided automated conventional and nuclear planning, to include intelligence and analysis functions. Refined existing production procedures.
- **FY 2004** - Migrate nuclear and conventional planning tools to the Theater Planning

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 43 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

Response Cells (TPRC) to support a deployable configuration. Initiate crisis action and immediate planning capability. Refine COMM links to Theaters. Conduct MUA demonstrations (including final demonstration) and exercises.

- **FY 2005** - Commence interim capability support phase. Complete the ACTD.

• FY2002 ACTDs

	FY 2003	FY 2004	FY 2005
Active Denial System (ADS)	1.700	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 2003** - Preliminary Design Review accomplished. Detailed design completed. First and second limited military utility assessment successfully completed. Joint concept of operation, transition strategy development, and effects testing continuing. System integration (battle management system, HMMWV, and beam director) started. Field demonstration conducted using system zero.
- **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 2003	FY 2004	FY 2005
Advanced Notices (AN)	3.500	0.600	0.600

UNCLASSIFIED

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

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

- Classified content only.

	FY 2003	FY 2004	FY 2005
Agent Defeat Warhead (ADW)	2.400	3.400	4.300

Demonstrate a high temperature, thermal radiation, incendiary, kinetic energy penetrator warhead to destroy biological and chemical manufacturing and storage facilities. Provide a robust means to neutralize chemical/biological agents while minimizing collateral damage.

- **FY 2003** - Conducted subsystem hardware testing and sled testing of dispensing system. Completed preliminary effectiveness predictions and testing.
- **FY 2004** - Complete the initial lethality kill rate experiments in order to determine the increase of kill/neutralization of CHEM/BIO agents provided by a unique ACTD fill. Conduct deceleration sensing fuse testing and sled testing of the final configuration.
- **FY 2005** - Conduct flight testing against biological and chemical targets with stimulant agent. Complete fabrication of the residual round and commence interim capability support phase. Conduct final demonstration. Support SD&D milestone decision through technical data from ADW ACTD. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Agile Transportation (AT21)	2.000	3.100	1.000

Demonstrate capability to optimize and schedule all transportation requirements (personnel and equipment) against available lift assets for movement to, from, and within the various theaters of operation.

- **FY 2003** - Completed demonstration of time-phased force and deployment data (TPFDD)

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 45 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

visualization in a collaborative environment; implemented beta test sites; and conducted demonstration of strategic-level optimization and scheduling.

- **FY 2004** - Conduct USTRANSCOM operator test of strategic-level capabilities using USCENTCOM movement requirements and apply lessons learned. Conduct initial Military Utility Assessment. Conduct prototype demos of operational-level optimization and scheduling. Harden and demonstrate visualization and collaboration environment and scheduling/optimization tools as interoperable capability. Demonstrate metrics reporting.
- **FY 2005** - Conduct final demonstration and Military Utility Assessment. Deliver and sustain a residual capability, transition to programs of record, and continue interim capability support period.

	FY 2003	FY 2004	FY 2005
Contamination Avoidance at Seaports of Debarkation (CASPOD)	3.100	3.400	1.200

Demonstrate contamination avoidance at seaports of debarkation.

- **FY 2003** - Delivered Theater Chemical Biological Response Packages (TCBRP) to CENTCOM for Operations Enduring Freedom and Iraqi Freedom. Performed technology testing and selection. Completed integrated assessment plan and initial transition plan. Conducted preliminary demonstrations at Charleston Naval Weapons Center. Incorporated initial results from FY02 base lining activities toward an upgraded CASPOD system.
- **FY 2004** - Revise concept of operations and tactics, techniques and procedures. Updated transition plan. Conduct final demonstrations and utility assessments. Enhance CASPOD capabilities from the baseline systems and based on findings from technical demonstrations. Complete the final demonstration.
- **FY 2005** - Transition technology and lessons learned. Conduct residual training and

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 46 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

support.

	FY 2003	FY 2004	FY 2005
Coalition Information Assurance Common Operational Picture (CIA COP)	2.200	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 2003** - C-IA COP ACTD operational oversight shifted to US Joint Forces Command. Held Coalition/Allies Stakeholder Requirements Workshop to identify principle Warfighting deficiencies with current capabilities, and elicit primary Warfighter needs. Participated in Joint Warfighter Interoperability Demonstration 03. Developed System Requirements. Created C4ISR Architecture Elements. Produced Conceptual Screen Prototype.
- **FY 2004** - Create Design Assessment prototype implementing Mission Definition, Coalition IT Performance Monitoring, and Incident Management. Demonstrate with Coalition Stakeholders. Complete CONOPS. Participate in Joint Warfighter Interoperability Demonstration 04. Implement preliminary Threat and Vulnerability portions of IT Risk Monitoring. Implement a multi-layered geographical display of units, connectivity, attacks, performance, and impacts. Implement initial coalition collaboration capabilities. Deploy early operational prototype to pilot site. Plan for Transition.
- **FY 2005** - Elicit and analyze operator/stakeholder pilot site feedback. Refine Coalition IT Performance Monitoring, IT Risk Monitoring, Geographical Display, Coalition Collaboration. Plan and support the Military Utility Assessment. Collect and analyze MUA findings. Implement change requests resulting from MUA findings. Execute Transition Plan to GCCS-J and the Joint Command and Control System (JC2). Complete the final demonstration.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 47 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Expendable Unmanned Aerial Vehicle (XUAV)	3.900	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 2003** - Upgraded avionics and data dissemination capabilities. Finalized vehicle/avionics design and produce residual units. Developed CONOPS and commenced military utility assessment. Provided special operations support during Operation Iraqi Freedom.
- **FY 2004** - Continue work on parasail, deliver residual systems and conduct final military utility assessment. Commence transition and interim capability support phase. Complete the final demonstration.
- **FY 2005** - Continue interim capability support phase. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Homeland Security Command and Control (HLS C2)	6.700	6.300	3.700

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

- **FY 2003** - Continued 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. Provided a fielded, initial capability and migrated capability to Joint Task Force Civil Support in its new assignment at Northern Command. The congressional defense committees added an additional \$3.0 million to enhance real-world demonstrations.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 48 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **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. Complete the final demonstration. As a result of added Congressional interest, an additional \$1.5 million was added to enhance and accelerate development and test of software tools for Federal, state and local department and agency collaboration.
- **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 2003	FY 2004	FY 2005
Hyperspectral Collection and Analysis (HYCAS)	3.500	1.600	0.200

Ddemonstrates the ability of hyperspectral (HSI) to address USCENTCOM's critical needs via a calibrated HSI sensor.

- **FY 2003** - Supported development of Army-COMPASS Sensor. Began development of Predator CONOPS and integration study of COMPASS and Predator. Re-designed Army COMPASS to fit onto Predator (AF-COMPASS). Supported search for Columbia debris. Procured long lead items for AF-COMPASS. Supported AFRL Falcon collections (Army COMPASS at Ft AP Hill). Developed, integrated, and flight tested tactical hyperspectral sensor on board MQ-1 Predator. Modified processing and exploitation algorithms. Integrated processing, exploitation and dissemination system in Predator Ground Control Station. Developed concept of operations and employment for tactical hyperspectral sensor.
- **FY 2004** - Demonstrate the tactical hyperspectral sensor and a Global Hawk hyperspectral sensor. AF-COMPASS planned for integration onto Predator. Refine concept of operations.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 49 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** - Transition tactical hyperspectral sensor to Aeronautical Systems Center for possible future development. Complete the final demonstration.

	FY 2003	FY 2004	FY 2005
Joint Distance Support and Response (JDSR)	2.900	3.700	2.800

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 2003** - Completed the CONOPS/TTP planning sessions for the Warfare Analysis Laboratory Exercise (WALEX). Coordinated with Services maintenance community for the development of the CONOPS/TTP. Completed draft development of a CONOPS/TTP document. Completed draft for the Integrated Assessment Plan (IAP). Completed draft Development Training Plans and documentation. Completed draft development of the IAP document. Completed site surveys for first Operational Demonstration at US Air Force Europe, Germany. Completed development of the Demonstration Execution Document (DED) for Demonstration 1. Completed Training in accordance with the training strategy for first demonstration. Completed planning and set-up of technical test laboratory. Completed the JDSR system design and architecture for the USAFE demonstration. Conducted USAFE operational demonstration according to measures of effectiveness and critical operational issues. Completed Quick Look Report for first demonstration. Coordinated and planned second demonstration. Completed build-up of local maintenance network software and knowledge center software. Performed initial system integration and full system tests. Modified and updated the modeling and simulation for the second operational demonstration. Initiated software and hardware certification for use in the second operational demonstration. Initiated procurement, build and integration of the JDSR system for the second operational demonstration. Initiated coordination and

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 50 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

refinement of JDSR transition strategy, deployed training requirements and CONOPS and TTPs.

- **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, final operational demonstration in support of JMUA. Integrate JDSR ACTD technology with Joint Explosive Ordnance Disposal ACTD technology. Develop recommendations for DOTMLPF issues based on JMUA results and report. Complete development and refinement of transition plan. Submit request for Transition Technology Initiative and POM funds request for FY05/06 transition start. 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 fielding. Purchase spares for EUE support. Complete CONOPs, TTPs and training package. Upgrade [as needed] business modeling and simulation for establishing joint common maintenance processes based on preliminary EUE results. Initiate transition of JDSR products to Program Of Records.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 51 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Joint Explosive Ordnance Disposal	5.300	3.200	4.900

Demonstrate a new integrated capability for joint and coalition explosive ordnance disposal forces to meet the evolving, asymmetrical, and sophisticated chemical, biological, radiological, nuclear, and high yield explosive terrorist threats.

- **FY 2003** - Conducted baseline exercises. Developed and exercised reach back capability. Integrated robotics with digital x-ray capability. Completed Joint TTPs for explosive ordnance disposal (EOD) forces conducting AT operations. Demonstrated contextual view to individual warriors based on relevance. Populated JEOD domain facts and beliefs repository. Performed 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. Complete transition plans.
- **FY 2005** - Improve Decision Support System capabilities. Conduct final ACTD Operational Demonstration and Military Utility Assessment. Field operational capability.

	FY 2003	FY 2004	FY 2005
Language and Speech Exploitation Resources (LASER)	4.200	1.100	0

Demonstrate technologies, concepts, and architecture paths providing language translation capabilities with improved interoperability, accuracy, deployability and timeliness of translation for speech and document exploitation. Assessments include users within the sponsoring Pacific Command, as well as warfighters in other combatant commands with immediate and critical language translation needs in the Global War On Terrorism.

- **FY 2003** - Conducted laboratory testing and evaluation of text-to-text and speech-to-speech automated translation projects. Identified automated translation tool

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 52 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

requirements for coalition operations and intelligence operations exploiting captured documents and interrogations. Defined architecture and integration approach. Planned initial participation in coalition exercises and conducted limited military utility assessments for text and speech translation tools. Provided interim translation tools to warfighters in Operation Enduring Freedom and Operation Iraqi Freedom for intelligence, force protection and civil operations. Interim phrase translators demonstrated in Afghanistan in security and medical support operations. Interim document exploitation tools used to triage captured Al Qaeda documents.

- **FY 2004** - Develop interim assessment of military utility for technologies and concept of operations assigned to each Integrated Process Team. Plan and conduct demonstrations (including the final demonstration) in USPACOM's area of responsibility and in other areas of operations. Provide interim language translation tools for assessment in current military operations in Iraq for speech and text communication with Iraqi civil and governmental personnel as well as interrogation of terrorist forces and exploitation of intercepted documents. Document exploitation tools have already proven useful for intelligence operations to capture enemy combatants and hidden arms caches. Develop transition plan for LASER products found to have utility for military and intelligence users and begin spiral implementation through machine language translation program office. Establish oversight of language translation initiatives throughout the Government.
- **FY 2005** - Conduct capstone demonstrations and military utility assessments. Assess opportunities for residuals in combatant command areas other than the sponsor's area of operations. Field interim product improvements for demonstration and extended user evaluations in coalition and intelligence operations. Finalize concepts of operations and tactics, techniques and procedures for user adoption. Begin implementation of transition plan and joint transition program.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 53 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Micro Air Vehicle (MAV)	4.000	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 2003** - Conducted technical analysis and developed integration plan.
- **FY 2004** - Conduct Phase 1: System requirements analysis, design and building of the air vehicle with a COTS engine. Design and development of a small, heavy fuel engine. Development of system tactics, techniques and procedures.
- **FY 2005** - Conduct field evaluations of the Phase 1 development. Complete development and production of a small, heavy fuel engine. Integrate heavy fuel engine and feedback from Phase 1 field evaluations into the Phase 2 MAV system development and production.

	FY 2003	FY 2004	FY 2005
Pathfinder	3.300	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 2003** - Continued technology search and component evaluation. Continued appropriate limited operational evaluations (LOEs) and conduct experiments with Ranger units. Began system integration activities and formulation of the Pathfinder system architecture. Began transition planning activities.
- **FY 2004** - Complete component evaluation and technology selection. Complete system integration activities. Continue appropriate LOEs and conduct experiments with Ranger units. Continue transition activities as appropriate.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 54 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** - Conduct culminating demonstration. Commence and provide support for the extended user evaluation (EUE). Continue transition activities.

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

Provide a SIGINT processing mode to more precisely identify signals of interest and determine its military utility.

- Classified content only

	FY 2003	FY 2004	FY 2005
Space-Based Moving Target Indicator (SBMTI)	6.300	6.300	0.600

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

- **FY 2003** - Developed and verified algorithms. Tested signal processing and tasking software.
- **FY 2004** - Conduct hardware assessment and testing. Conduct field evaluation of software/hardware for determining effectiveness of technology.
- **FY 2005** - Conduct final military utility assessment based on final demonstration. Conclude interim capability support phase. Provide robust requirements definition to support SD&D phase. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
SPARTAN	2.300	4.000	2.400

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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 55 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2003** - Developed and delivered an intelligence, surveillance and reconnaissance (ISR) Spartan prototype to the Second Fleet (USS Enterprise Battlegroup) for deployment. Commenced development of the Undersea Warfare Module (USWM). Continued Command Detection System (CDS) and ISR Module development and integration/testing.
- **FY 2004** - Complete development of the ISRM. Complete Mine Warfare module and demonstration. Complete spiral 2 of ISR module.
- **FY 2005** - Complete development of the Precision Strike module, as well as integration and systems testing. Complete the final demonstration and military utility assessment. Begin interim capability support phase.

	FY 2003	FY 2004	FY 2005
Thermobarics (TB)	4.100	5.700	2.400

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 2003** - Conducted full-scale validation tests. Down selected explosive fill material. Selected warhead and integrated explosive. Developed weapon effectiveness models for planning tool.
- **FY 2004** - Complete operational demonstrations of weapon and planning tool capability. Determine effectiveness of thermobaric fill in field testing scenarios. Produce residual weapons for further testing in SD&D phase or for use in contingencies.
- **FY 2005** - Conduct final demonstration. Deliver 10-20 thermobaric-filled residual warheads. Conduct user training. Support transition to SD&D phase by providing data to lead service. Complete the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 56 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

• FY2003 ACTDs

	FY 2003	FY 2004	FY 2005
Adaptive Joint C4ISR Node (AJCN)	5.027	6.300	4.300

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 initiated ACTD payload development. Validated requirements definition with Warfare Analysis Laboratory Exercise (WALEX). Demonstrated multi-mission performance baseline in laboratory demonstration and conducted a flight test on a CECOM C-23 to evaluate in-flight co-site mitigation performance. This flight test was successful and significantly reduced the risk of the FY04 Interim Joint Military Utility Assessment (IJMUA) and the FY05 Joint Military Utility Assessment (JMUA). Began integration of a Joint Tactical Radio System (JTRS) compliant software version of the Single-Channel, Ground-to-Air Radio System (SINCGARS) waveform within AJCN architecture. This waveform will be used in the FY04 IJMUA and this effort has demonstrated feasibility of porting JTRS waveforms into the AJCN architecture. Complete C-23 antenna layout and isolation measurements in preparation for the FY04 IJMUA. Initiated development of CONOPS and TTPs and training package. Initiated development of the Integrated Assessment Plan. Completed and staffed the Implementation Directive and completed and started staffing of the Management Plan.
- FY 2004** -Integrate AJCN payload and antennas on C-23 aircraft. Conduct the IJMUA at the Electronic Proving Ground at Ft. Huachuca with flight demonstrations and prepare an IJMUA report. Initiate integration of the four JMUA payloads and complete the antenna layout for the Hunter and NKC-135 aircraft that will be used in the JMUA and Extended

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 57 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

User Evaluation. Continue development of CONOPS and TTPs and initiate development of the training package.

- **FY 2005** - Integrate AJCN payloads and antennas on NKC-135 and Hunter aircraft (2 each). Conduct flight tests to verify operation of payload and AJCN network and explore CONOPS. Conduct the final demonstration, 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
Counter Bomb/ Counter Bomber (CB2)	1.000	4.600	6.100

Provides technologies to detect either suicide bombers or command initiated terrorist conventional and non-conventional explosive devices. Objectives includes improving force protection of deployed and CONUS-based forces. The CB2 ACTD was a late FY-03 new start in reaction to lessons learned during Operation Iraqi Freedom (OIF).

- **FY 2003** - Top-level planning was completed and JROC approval was obtained. The Implementation Directive was developed.
- **FY 2004** - Commence technical demonstrations. An intelligence assessment operational demonstration is planned in cooperation with INSCOM. Military utility assessments for two operational demonstrations will be completed. Planning for the USEUCOM operational demonstration will be initiated.
- **FY 2005** - Conduct the USEUCOM operational demonstration at Ramstein AFB, GE. Planning will be initiated for operational demonstrations at forward operating locations in both USEUCOM and USSOUTHCOM.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 58 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Deployable Cargo Screening (DCS)	0	1.100	0.400

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

- **FY 2003** - Identified functional requirements and operational concepts for cargo screening system. Identified critical operational issues in process of screening cargo shipped by C-17s. Identified key sensor technology requirements for integration in cargo screening system. Prepared contract for construction of pilot system.
- **FY 2004** - Develop demonstration plan. Prepare and assess concept of operations. Test and deliver pilot system to demonstration operational sites. Perform military utility assessments of the pilot systems and spiral upgrades of sensor systems. Accelerate fielding of interim system for assessment and current operational imperatives. Complete the final demonstration.
- **FY 2005** - Continue with military exercises and Ad Hoc operational and technical testing. Complete military assessment. Transition lessons learned during extended user evaluation of demonstration systems to objective cargo screening system procurements and fielding. Concepts of Operations, tactics, techniques and procedures also transitioned to Air Mobility Command trans-shipment operations. Complete the ACTD.

	FY 2003	FY 2004	FY 2005
Foliage Penetration Synthetic Aperture Radar (FOPEN)	0	0	1.200

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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 59 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2003/4** - Targeted technologies were returned to the technology base after initiation. Alternate technologies are under examination to meet operational requirements. As a result, the final demonstration and completion date is to be determined.
- **FY 2005** - After alternate technologies are identified, reinitiate the ACTD with submission of the Implementation Directive to DUSD (AS&C). Begin initial demonstrations.

	FY 2003	FY 2004	FY 2005
Gridlock	4.000	4.500	4.000

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** - Completed accuracy and timeliness testing in live end-to-end laboratory technology demonstration.
- **FY2004** - Achieve accuracy and timeliness goals in Predator UAV and Global Hawk testing during JEFX 2004 at Nellis AFB. Initiate transition to operations for Predator imagery and Global Hawk Synthetic Aperture Radar (SAR) 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 and Global Hawk operations. Provide interim capability to Coalition Air Operations Center (CAOC) and Joint Operations Centers (JOC) at selected Combatant Commander sites. Complete the final demonstration and the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 60 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
High Altitude Airship (HAA)	2.000	4.600	4.900

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** - Airship preliminary design completed. Included materials and envelope fabrication plans, seaming, power (generation, management, and distribution), propulsion systems, and C2 subsystem development planning. Initiated payload requirements definition, protocol identification, selection, and interface design. Performed parallel risk reduction efforts.
- **FY2004** - Complete airship vehicle design and initial development. Integrate subsystems. Perform subsystem ground tests. Complete payload interface design.
- **FY2005** - Integrate flight vehicle and initiate ground testing. Initiate integrated airship flight-testing with demonstration payload. Complete risk assessments. Initiate Military Utility Assessment (MUA).

	FY 2003	FY 2004	FY 2005
Joint Blue Force Situational Awareness (JBFSa)	3.400	2.000	0.900

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

- **FY 2003** - Initiated development and creation of the Testbed Mission Management Center (MMC). Conducted technical demo of Spiral I functionality in Joint Warrior Interoperability Demonstration (JWID) with live feeds from BFT devices. Integrated JBFSa ACTD spiral 1 capabilities into selected venue (Jagged Thrust '03). Developed and executed Spiral 1 exercise and CONOPs and conducted QuickLook Joint Military Utility Assessment (JMUA). Determined Spiral 2 Venue (Foal Eagle 04). Started Spiral 2 exercise CONOPs. Integrated JBFSa ACTD Spiral 2 capabilities into selected venue.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 61 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

Started development of CONOPs, TTPs and training package and included Spiral 1 lessons learned. Developed ACTD transition plan and strategy. Developed Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel and Facilities (DOTMLPF) recommendations for all Spiral 1 activities.

- **FY 2004** - Continue planning and integration of JBFSA ACTD Spiral 2 capabilities into selected venue (Foal Eagle 04) 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. Complete the final demonstration.
- **FY 2005** - Conduct Extended User Evaluations of residual package. Initiate transition of JBFSA products to targeted PORs 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)	0.200	2.900	1.300

Provides an offensive information operations program which demonstrates the ability to perform specific offensive information operations measures in a real-world environment. ACTD delayed one year due to operational requirements. Further definition is classified.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 62 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Night Vision Cave and Urban Assault (NVCUA)	1.000	6.500	6.400

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

- **FY2003** - Formed program team and establish IPTs. Prepared and coordinated Management Plan. Initiated technology development effort for Approach Sensors and Cave Assault Kit. Performed component and project level testing. Prepared exercise and evaluation plans for Operational Demonstration I. Developed initial Concepts of Operations (CONOPs) and Tactics, Techniques and Procedures (TTPs). Initiated 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	2.300	1.200

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.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 63 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2003** - Collected data and extended database of small arms for theater specific weapons. Updated Overwatch system/subsystem requirements and develop hardware specs. Acquired system components (sensor, processor), integrated and tested. Updated system software for new hardware configurations including laser ranger/marker and imager. Developed 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 unattended ground vehicle (UGV) operation. Perform Full Scale Test 2 - a LUT with a UGV-based system.

	FY 2003	FY 2004	FY 2005
Tactical Interferometric Synthetic Aperture Radar (IFSAR) Mapping (TIM)	4.500	6.900	1.200

Provide theater-wide three-dimensional, fine resolution terrain data and synthetic aperture radar imagery for mission planning and rehearsal data acquisition in joint operations.

- **FY2003** - Commenced design of tactical IFSAR sensor system. Baselined 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).

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 64 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2003	FY 2004	FY 2005
Theater Support Vessel (TSV)	5.000	5.700	9.200

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** - Contract awarded for TSV-1X, Spearhead, military modifications applied, outfitted with C4ISR tactical communications system, and deployed to CENTCOM AOR to support Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF). Demonstrated invaluable capabilities during military operations. Contract awarded for design and production of Cargo Handling System (CHS I).
- **FY 2004** - Integrate Enroute Mission planning capability into both the HSV-X1 and TSV-1X and increase other C4 capabilities of both vessels. Install CHS I on TSV-1X. TSV-1X to return to CENTCOM AOR after CHS I modifications completed. HSV-X1 proceeding to USARPAC. Proceed with technical and operational demonstrations. Analyze various logistics support concepts. Conduct interim assessment. Research CHS II, a potential cargo handling/lift system modification for HSV-X1; if deemed feasible, award contract for production and installation.
- **FY 2005** - Integrate self-protection systems and upgrade C4I systems on both vessels. Install CHS II. Continue with military exercises and operational and technical testing. Complete the final demonstration and military utility assessment. Lessons learned transitioned to objective vessel. Concepts of Operations, tactics, techniques and procedures also transitioned.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 65 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	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** - Developed initial software for the Underground Target Analysis System (UTAS). Reached initial capability with the Underground Analysis and Planning System (UGAPS) database that integrates target characterization, aim point selection and high-fidelity weapons effects analysis. Updated 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. Expanded 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.
- **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

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 66 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

USSTRATCOM. Complete the final demonstration.

	FY 2003	FY 2004	FY 2005
Urban Recon (UR)	1.475	1.700	1.500

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

- **FY 2003** - Designed prototype laser sensor hardware and software configurations for vehicle-mounted, soldier-borne, and UAV-mounted configurations. Developed demonstration plan to determine utility of surrogate Urban Recon data within JRX03 and acquire user feedback. Began development of 3-D data fusion software supporting automatic mosaic of 3-D image data from flash laser collections. Developed initial demonstration and assessment plans, CONOPS, TTPs and training package. Began 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 gimbals 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 cataloging 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.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 67 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **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.

• FY2004 ACTDs

	FY 2004	FY 2005
Advanced Tactical Targeting Technology (AT3)	5.00	6.100

Develops, integrates, demonstrates and transitions the ability to rapidly identify and geolocate short on-time threat emitters by fighter aircraft equipped with digital upgrades to Radar Warning Receivers (RWR) onboard. Will provide accurate target coordinates for immediate targeting by Suppression of Enemy Air Defense (SEAD) combat aircraft.

- **FY 2004** - Conduct initial Software Integration Lab (SIL) testing. Deliver initial ALR-69 with digital upgrades with AT3 insertion. Conduct F-16/RWR interface testing for RF compatibility.
- **FY 2005** - Begin initial tower testing with RWR sets to demonstrate Time Difference OF Arrival (TDOA) computation rapidly and netted. Conduct first two initial flight demonstrations and interim MUA.
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UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2004	FY 2005
Agile Rapid Global Combat Support (ARGCS)	3.000	4.900

Demonstrates Integrated Combat Support System technology that will establish a common, interoperable, scalable and morphable capability for electronics weapon systems support.

- **FY 2004** - Complete ARGCS contractor evaluation and system design. Initiate knowledge database information collection for Joint military utility assessment (JMUA).
- **FY 2005** - Complete fabrication of systems hardware/software. Conduct pre-deployment testing in a controlled environment and at beta sites.

	FY 2004	FY 2005
Coalition Reception Staging & Onward Movement (CORSOM)	0.600	0.300

Demonstrates a set of technologies providing modeling and simulation support and establish procedures to provide Combatant Commanders with a better Reception, Staging and Onward Movement (RSOM)Planning and Execution Monitoring system for coalition deployment operations.

- **FY 2004** - Requirements capture and initial implementation of prototypes for RSOM data exchange and software extensions to NATO and national systems. Conduct laboratory testing and validation experiment.
- **FY 2005** - Finalization of prototypes and Coalition RSOM TTPs. Provide In-transit Visibility (ITV) concept and technology assessment. Provide final operational demonstration to users in a major coalition exercise.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 69 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

	FY 2004	FY 2005
Coalition Shared Intelligence Network Environment (COSINE)	0.200	0.300

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

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

	FY 2004	FY 2005
Future Tactical Truck System (FTTS)	4.500	7.300

Demonstrates the operational potential, technical feasibility and maturity of advanced vehicle technologies through integrated demonstrations of subsystems, systems, and system of systems.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 70 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2004** - Test and evaluate high payoff tactical vehicle technologies coupled with future force sustainment concepts in an operation environment. Execute contract award for the demonstrator design and fabrication.
- **FY 2005** - Complete demonstrator fabrication and deliver hardware for evaluation.

	FY 2004	FY 2005
Joint Precision Airdrop System (JPADS)	0.500	2.900

Develops, demonstrates a fast, flexible, direct projection-based distribution system to sustain rapidly-deployed forces at any global destination - strategically, operationally, and tactically.

- **FY 2004** - Refine tactics, techniques and procedures (TTP)/Concept of Operations (CONOPS). Perform prototype design and fabrication. Initiate system integration (Air Force Precision Airdrop System (PADS) with Army Precision, Extended Glide Airdrop System (PEGASYS)).
- **FY 2005** - Complete system integration and conduct technical testing; conduct User Training; and demonstrate a high altitude (25,000 ft. Mean Sea Level), autonomous offset airdrop capability (goal 10-20 miles offset) with the option to delivery separate and distinct payloads (up to 10,000 lbs total, full rigged weight) to multiple locations.

	FY 2004	FY 2005
Joint Unmanned Systems Common Control	3.500	4.300

Provides a reconfigurable and scaleable Command & control (C2) architecture that allows each service to tailor unmanned systems management to its specific mission needs

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2004** - Develop joint requirements and preliminary CONOPS, an integrated assessment plan, and a plan for integration of legacy technologies.
- **FY 2005** - Conduct technical and operational demonstrations of the common control architecture. Conduct user training.

	FY 2004	FY 2005
Man-Portable Threat Warning System (MANPACK)	4.500	6.100

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

- **FY 2004** - Conduct technology search of existing off-the-shelf capabilities and perform limited integration leading to a baseline MANPACK ensemble. Develop CONOPS and finalize MOEs/MOPs. Develop initial TTPs and take delivery of the Demo I systems. Begin user training.
- **FY 2005** - Complete first demonstration. Identify early transition opportunities. Take delivery of Demo II systems and continue user training.

	FY 2004	FY 2005
Multi-Sensor Aerospace/Ground Joint ISR Interoperability Coalition (MAJIIC)	2.500	2.100

Develop, test and transition a set of standards, extensible Markup Language (XML) formats, and information services to promote intelligence, surveillance and reconnaissance (ISR) interoperability between U.S. and Coalition ground stations and systems. Demonstrate near-real time interoperability of data from electro-optical, infrared, motion video, moving target imagery, synthetic aperture radar, and other sensors. Enhance collaborative

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 72 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

targeting operations, improve situational awareness, and support U.S. Joint ISR operations. U.S. Joint Forces Command is the operational sponsor.

- **FY 2004** - Complete contractor selection and initiate ISR Information Service (ISRIS) design and development. Demonstrate initial ISRIS capability during the Horizontal Fusion Quantum Leap exercise. Develop initial MAJIIC Concept of Operations (CONOPS).
- **FY 2005** - Conduct ISRIS laboratory testing and CONOPS validation experimentation. Initiate the MAJIIC Project multinational working groups. Expand ISRIS support to additional platform and sensors.

	FY 2004	FY 2005
PI	2.500	2.400

Classified content only.

	FY 2004	FY 2005
Protected Landing and Takeoff (PLATO)	1.000	1.200

Assist in the development of an affordable Man-Portable Air Defense (MANPAD) countermeasures system that evaluates the use of a ground-based sensor grid in the vicinity of airports. The Protection for Landing and Take-Off (PLATO) ACTD has been delayed pending interagency agreement between the Department of Defense and the Department of Homeland Security on a coordinated strategy of investment for countermeasures to the Man-Portable Air Defense System (MANPADS) terrorist threat.

- **FY 2004** - Measure infrared (IR) signatures of civil aircraft at a U.S. airport. Begin development of digital missile engagement models. Assess sensors to support the grid. Conduct reactive pyrophorics effectiveness modeling. Sensor fusion system development.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 73 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

- **FY 2005** - Hardware in the loop missile engagement model development. Conduct ground-based sensor development test and evaluation. Conduct reactive pyrophorics flight evaluation. Complete a sensor fusion system flight test.

	FY 2004	FY 2005
Psychological Operations (PSYOP) Global Reach	2.900	8.100

Provide extended range over which the PSYOP message can be delivered, develop capabilities to disseminate products multi-dimensionally across extended ranges into denied areas, including over-the-air and new internet based methods. Advance the capabilities of automated planning processes through collaborative technologies, integrated into special operations forces (SOF) planning systems.

- **FY 2004** - Initiate development/integration of satellite radio, television, and broadcast systems; UAV based broadcast/relay payloads; and the PSYOP mission planning system.
- **FY 2005** - Begin development/integration of advanced broadcast/relay platforms and scatterable dissemination media. Perform demonstration of satellite TV systems. Begin transition of satellite TV capability to warfighter.

	FY 2004	FY 2005
Theater Effects-Based Operations (TEBO)	4.000	5.400

The TEBO ACTD will provide Combatant Commanders with enhanced capabilities to analyze, plan, execute, and assess Effects Based Operations (EBO) at the strategic and operational levels by integrating computer-aided decision support tools, Concept of Operations (CONOPS), and Tactics, Techniques and Procedures (TTPs) into Integrated Mission Architectures.

- **FY 2004** - Establish EBO baseline for US Forces Korea (USFK). Demonstrate prototype

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 74 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

applications and tools for EBO and Operational Net Assessment (ONA) based on US Joint Forces Command (JFCOM) developments. Initiate CONOPS development. Establish integration and test facility. Participate in USFK and JFCOM exercises.

- **FY 2005** - Initiate development of EBO action planning tools and visualization tools. Conduct soldier-in-the-loop testing. Conduct initial military utility assessment. Continue CONOPS development. Participate in USFK and JFCOM exercises.

C. Other Program Funding Summary: N/A

D. Acquisition Strategy: N/A

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.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 75 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

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

<u>FY 1997 ACTDs</u>	FY 2003	FY 2004	FY 2005
Chemical Add-On to Biological Detection*	0	0	0
Consequence Management*	0	0	0
Counterproliferation II**	0	0	0
Extending the Littoral Battlespace & JTF Warnet*	13.800	0	0
Information Operations Planning Tool*	0	0	0
Integrated Collection Management*	0	0	0
Joint Advanced Health and Usage Monitoring System**	1.200	0.800	0
Military Operations in Urban Terrain*	0	0	0
Rapid Terrain Visualization*	0	0	0

* Completed

** Completed the demonstration phase of the ACTD.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 76 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

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

*Completed

** Completed the demonstration phase of the ACTD

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 77 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

<u>FY 1999 ACTDs</u>	FY 2003	FY 2004	FY 2005
Battle Damage Assessment in the Joint Targeting Toolbox*	0	0	0
Coherent Analytical Computing Environment**	0.400	0	0
Common Spectral MASINT Exploitation Capability*	0	0	0
Compact Environment Anomaly Sensor II*	0.100	0	0
Force Medical Protection*	0	0	0
Human Intelligence and Counterintelligence Support Tools*	1.700	0	0
Joint Medical Operations Telemedicine*	0	0	0
Joint Theater Logistics**	0	0	0
Personnel Recovery Mission Software*	0	0	0
Small Unit Logistics*	0	0	0
Theater Air and Missile Defense Interoperability*	0.500	0	0

*Completed

** Completed the demonstration phase of the ACTD

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 78 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

<u>FY 2000 ACTDs</u>	FY 2003	FY 2004	FY 2005
CINC 21**	6.000	1.500	0.400
Coalition Aerial Surveillance and Reconnaissance	2.400	3.000	0.600
Communication/Navigation Outage Forecasting System	2.000	0.500	0
Computerized Operational MASINT Weather	1.200	0	0
Content-Based Information Security	0	0	0
Global Monitoring of ISR Space Systems	0.300	0.200	0
Ground-To-Air Passive Surveillance	1.200	0	0
Joint Intelligence, Surveillance and Reconnaissance	0	0	0
Multiple Link Antenna System	3.900	0	0
Quick Bolt**	5.800	0	0
Restoration of Operations**	1.700	1.700	0
Tri-Band Antenna Signal Combiner*	0	0	0

*Completed

** Completed the demonstration phase of the ACTD

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 79 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

FY 2001 ACTDs	FY 2003	FY 2004	FY 2005
Active Network Intrusion Defense	1.800	1.900	1.200
Adaptive Battlespace Awareness	3.400	1.800	1.200
Advanced Tactical Laser (Note 2)	5.800	5.800	3.500
Advanced Technology Ordnance Surveillance	0.700	0.700	0.800
Area Cruise Missile Defense**	1.800	0	0
Coalition Combat Identification	5.800	4.600	3.100
Coalition Theater Logistics	0.300	2.300	0
Coastal Area Protection System*	0	0	0
Hunter Standoff Killer Team	8.400	6.300	4.300
Joint Area Clearance	1.500	1.100	0
Loitering Electronic Warfare Killer***	0.200	0.200	0
Network-Centric Collaborative Targeting	5.800	5.700	1.200
Personnel Recovery Extraction Survivability Aided by Smart Sensors	5.800	5.200	0
Tactical Missile System Penetrator	10.900	0.600	0
Theater Integrated Planning Subsystem	0.700	0.700	0.300

*Completed

** Completed the demonstration phase of the ACTD

*** This ACTD was concluded in early FY04 and returned to the technical base due to technical maturity issues.

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 80 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

<u>FY 2002 ACTDs</u>	FY 2003	FY 2004	FY 2005
Active Denial System	1.700	7.700	3.700
Advanced Notices	3.500	0.600	0.600
Agent Defeat Warhead	2.400	3.400	4.300
Agile Transportation for the 21 st Century (AT21)	2.000	3.100	1.000
Coalition Information Assurance Common Operational Picture	2.200	3.600	3.800
Contamination Avoidance at Seaports of Debarkation	3.100	3.400	1.200
Expendable Unmanned Aerial Vehicle	3.900	0.700	0.500
Homeland Security Command and Control	6.700	6.300	3.700
Hyperspectral Collection and Analysis	3.500	1.600	0.200
Joint Distance Support and Response	2.900	3.700	2.800
Joint Explosive Ordnance Disposal	5.300	3.200	4.900
Language and Speech Exploitation Resources	4.200	1.100	0
Micro Air Vehicle	4.000	3.400	3.100
Pathfinder	3.300	1.000	0.8
Signals Intelligence Processing	0	0.600	0
Space-Based Moving Target Indicator	6.300	6.300	0.600
SPARTAN	2.300	4.000	2.400
Thermobarics	4.100	5.700	2.400

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 81 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

FY 2003 ACTDs	FY 2003	FY 2004	FY 2005
Adaptive Joint C4ISR Node	5.027	6.300	4.300
Counter Bomb/ Counter Bomber	1.000	4.600	6.100
Deployable Cargo Screening	0	1.100	0.400
Foliage Penetration Synthetic Aperture Radar	0	0	1.200
Gridlock	4.000	4.500	4.000
High Altitude Airship	2.000	4.600	4.900
Joint Blue Force Situational Awareness	3.400	2.000	0.900
Midnight Stand (formerly Idaho Thunder)	0.200	2.900	1.300
Night Vision Cave and Urban Assault	1.000	6.500	6.400
Overwatch	3.000	2.300	1.200
Tactical IFSAR Mapping	4.500	6.900	1.200
Theater Support Vessel	5.000	5.700	9.200
Tunnel Target Defeat	3.000	0	0
Urban Recon	1.475	1.700	1.500

UNCLASSIFIED

R-1 Shopping List Item No. 41

Page 82 of 83

UNCLASSIFIED

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2a Exhibit)		Date: February 2004
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS (PE 0603750D8Z)	

<u>FY 2004 ACTDs</u>	FY 2004	FY 2005
Advanced Tactical Targeting Technology	5.000	6.100
Agile Rapid Global Combat Support	3.000	4.900
Coalition Reception Staging and Inward Movement	0.600	0.300
Coalition Shared Intelligence Network Environment	0.200	0.300
Future Tactical Truck System	4.500	7.300
Joint Precision Airdrop System	0.500	2.900
Joint Unmanned System Common Control	3.500	4.300
Man-Portable Threat Warning System	4.500	6.100
Multi-Sensor Aerospace/ Ground Joint ISR Interoperability Coalition	2.500	2.100
PI	2.500	2.400
Protected Landing and Takeoff	1.000	1.200
Psychological Operations Global Reach	2.900	8.100
Theater Effects-Based Operations	4.000	5.400