

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)						DATE February 2002			
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3					R-1 ITEM NOMENCLATURE Advanced Concept Technology Demonstrations PE 0603750D8Z				
COST (In Millions)	FY2001	FY2002	FY2003	FY2004	FY2005	FY2006	FY2007	Cost to Complete	Total Cost
Total Program Element (PE) Cost	118.819*	157.762	199.580	202.022	204.561	207.222	209.893	Continuing	Continuing
ACTDs/P523	118.819	157.762	199.580	202.022	204.561	207.222	209.893	Continuing	Continuing
DERF			2.000						

* Updates the current actuals amount for FY-2001

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

BRIEF DESCRIPTION OF ELEMENT: The Department of Defense (DoD) recognizes the need to rapidly develop and field new technological capabilities, and to explore new and innovative operational and organizational concepts associated with those capabilities. Such advances are critical to the objective of supporting the Chairman's *Joint Vision 2020*. Advanced Concept Technology Demonstrations (ACTDs) are low-to-moderate risk vehicles for pursuing those objectives. ACTDs are capability demonstration and evaluation programs in which the development and employment of technology and innovative, operational concepts by the military user are the primary focus. The demonstrations typically involve a material development organization that develops the mature technology applications, and a warfighting sponsor that assesses the military utility. In addition to stimulating innovation, ACTDs offer three other significant opportunities. They provide experienced combat commanders with an opportunity to develop operational concepts and operational requirements to fully exploit the technologies provided. They allow the users an opportunity to assess the military utility of the proposed capability prior to a major acquisition commitment. They also provide military Services with a mechanism for compressing acquisition cycle time, significantly improving their response to priority operational needs. As such, ACTDs are a key element of the DoD acquisition reform process. They do not substitute for formal DoD acquisition procedures, but can speed effective operational employment of technologies which are verified by combatant commands to have demonstrated military utility. Since FY 1999, ACTDs have been an integral part of 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 to prepare its annual Campaign Plans in order to insure ACTDs integrate technology and develop new concepts of operation to fully leverage with and integrate into future joint experiments. ACTDs continue to fill a critical and unique role in addressing joint warfighting requirements. In many cases, ACTDs focus attention on capabilities required by joint commanders that cannot be satisfied by the acquisition investment of a single military service.

(U) Ideally, the Military Departments and Defense Agencies provide most of the funding (80–85 percent) for ACTDs. This encourages Service/Agency commitment to the ACTD. Funding from this program element is used: 1) to support actual demonstrations and experimental employment; 2) to provide hardware to demonstrate military utility; and 3) to fund transition, interim capability operations and support for up to two years after the operational

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demonstration phase of the ACTD. This two-year phase provides the Service, Agency, and operators with adequate time to continue to address the issues of supportability, maintainability and training identified by the ACTD.

(U) Since program commencement in 1994, DUSD(AS&C) has initiated 99 unclassified ACTDs. Thirty-two of these have been completed as of the end of Fiscal Year 2001, resulting in 72 distinct products which have evolved as follows: (a) six entered engineering, and manufacturing development; (b) sixteen have transitioned to acquisition; (c) twenty-seven have integrated with current operational software systems, such as Global Command and Control System (GCCS) and Global Combat Support System (GCSS); and (d) twenty-three hardware-based solutions have previously been or currently are operationally deployed. Over twenty ACTDs were used during Operation Allied Force, some of which are still actively employed in peacekeeping operations. Subsequently, greater than thirty ACTDs are deployed, or are preparing for deployment/accelerated development, in support of Operations Enduring Freedom and Noble Eagle, as well as for Homeland Security operations.

(U) Both the Science and Technology (S&T) and the warfighter communities submit candidate ACTDs for an annual review cycle. The candidates proposed by the S&T community reflect technological opportunities enabled by recently demonstrated technology. The candidates proposed by the warfighter community (Joint Chiefs of Staff (JCS), Unified Commanders in Chief (CINCs) and military Service and agency operational organizations) respond to a deficiency in military capability or to an emerging military need. For each candidate, it is necessary to confirm that the proposed concept is based on technology that is sufficiently mature for rapid exploitation, and that the capability addresses a priority military need. Candidates are organized into the *Joint Vision 2020* operational concepts of Dominant Maneuver, Precision Engagement, Full Dimensional Protection and Focused Logistics.

(U) The maturity of the technology associated with the proposed capability is assessed by the DUSD (AS&C), with assistance of senior members of the Science and Technology community (known as the Breakfast Club). The Joint Requirements Oversight Council (JROC) establishes the priority of the ACTD candidates by military need. The principal management tools for the ACTD are the Implementation Directive and Management Plan. Each approved ACTD will be described in these top-level documents which provide details of the demonstration/evaluation, the main objectives, approach, critical events, measures of success, transition options, participants, schedule, and funding. Review of the candidates for FY 2002 ACTDs began in February 2001. Eighteen ACTD candidates were recommended and prioritized by the JROC. Based on funding availability, fifteen ACTD programs were subsequently selected to begin. Funding for new FY 2002 ACTDs is approximately \$35 million.

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

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(U) **PROGRAM ACCOMPLISHMENTS AND PLANS:**

(U) **FY 2001 Accomplishments:** All on-going ACTDs initiated in Fiscal Years 1995 through 2000 were reviewed for objectives, content and management. This includes in-depth review by the ACTD operational sponsors, usually the CINCs (such as United States Joint Forces Command (JFCOM)). Twelve ACTDs were completed in Fiscal Year 2001. The Unattended Ground Sensors and the Miniature Air-Launched Decoy each transitioned to acquisition. Ten ACTD software products were integrated within operational systems, such as Link-16 installation at the Combined Air Operation Center supporting Operation Allied Force. Also, eight hardware-based products were operationally deployed to Operations Allied Force and Southern Watch, as well as Enduring Freedom, Noble Eagle and for Homeland Security. Some ACTD products remained in theater as part of Kosovo peacekeeping operations. Thirty percent of all ACTDs participated in Operations Enduring Freedom and Noble Eagle, as well as Homeland Security operations. For example, Rapid Terrain Visualization ACTD sensors proved invaluable to the Federal Emergency Management Agency, providing detailed, airborne data at the World Trade Center. Fifteen new ACTDs were started in FY 2001 (see specific accomplishments below): Active Network Intrusion Defense, Adaptive Battlespace Awareness, Advanced Tactical Laser, Advanced Technology Ordnance Surveillance, Area Cruise Missile Defense, Coalition Combat Identification, Coalition Theater Logistics, Coastal Area Protection System, Hunter Standoff Killer Team, Joint Area Clearance, Loitering Electronic Warfare Killer, Network-Centric Collaborative Targeting, Personnel Recovery Extraction Survivability Aided by Smart Sensors, Tactical Missile System – Penetrator and Theater Integrated Planning System. The data call for FY 2002 ACTDs began in October 2000. Twenty-nine ACTD candidates, of the seventy received from the Unified Commands, the Services and Defense agencies, were considered for final selection. Candidates covered a broad range of technologies and needs, including counter-terrorism, force protection, homeland security, logistics, intelligence, reconnaissance, surveillance, information technology, ordnance development and disposal, communications and information assurance. These candidates were evaluated for technical maturity by the Breakfast Club and prioritized by each of the CINCs and Services. The JROC then completed final prioritization, validating military requirements for eighteen candidates, pending final ACTD selection based upon funding availability. FY 2001 funds were transferred to the executing services/agencies in the amount of \$118.819 million.

(U) Other significant accomplishments for FY 2001 were:

 FY 1995 Starts:

- Precision SIGINT Targeting System (PSTS): Concluded the interim capability support period and ended the ACTD.

 FY 1996 Starts:

- Airbase/Port Biological Detection System: Continued residual maintenance of detector networks, provided depot repairs and spares, initiated upgrade of sampling system and maintained ongoing operator training at four sites in two theaters. Provided data and findings for engineering and manufacturing development (EMD) of ACTD elements. Continued the interim capability period.
- Joint Logistics: Transitioned Joint Logistics Decision Support tools to GCSS through the Advanced Information Technology Services (AITS) Joint Program Office (JPO) within the Defense Information Systems Agency (DISA). Continue the interim capability support period.

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- Miniature Air-Launched Decoy (MALD): Concluded the interim capability period to end the ACTD.
- Navigation Warfare (NavWar): Concluded the interim capability period to end the ACTD.
- Theater High Energy Laser (THEL): Commenced the interim capability support period.

FY 1997 Starts

- Counterproliferation II (CP II): Completed the Bomb Impact Assessment (BIA) system critical design review (CDR) and final research, development, test and evaluation (RDT&E), including the final data evaluation flights necessary to qualify for production. Conducted two sled tests of the BLU-116 A/B Advanced Unitary Penetrator. Continued Hard Target Smart Fuze (HTSF) EMD and completed several cannon, sled and shock tests. Continued RDT&E of Tactical Tomahawk Penetrator Variant (TTPV), completing the warhead design and demonstrating warhead lethality inside a hardened, simulated chemical production facility. Executed the first CP II ACTD operational demonstration, obtaining target response/collateral effects data of a Joint Air-to-Surface Standoff Missile (JASSM) against a simulated biological weapons facility.
- Extending the Littoral Battlespace (ELB): Conducted Major Systems Demonstration (MSD) II, followed by the military utility assessment. De-installed partial ELB configuration from the Amphibious Ready Group (ARG). Continued residual planning and transition planning efforts with Joint/Navy/USMC acquisition programs.
- Information Operations Planning Tool (IOPT): Finalized transition plans. IOPT supported Central Command (CENTCOM) and Central Air Forces (CENTAF) in INTERNAL LOOK 2001. Provided IOPT capability to other IO-related programs in various services. Concluded the interim capability period and ended the ACTD.
- Integrated Collection Management (ICM): Developed additional interfaces to collection platforms, collection nodes and data sources. Further enhanced and refined software. Developed systems integration and enhancements to processes in response to user feedback. Conducted military utility assessment demonstrations, delivered residual interim capability to JFCOM and began transition of technology for acquisition.
- Joint Advanced Health and Usage Monitoring System (JAHUMS): Conducted bench-level integration tests of technology modules and integrated technology modules on JAHUMS flight test aircraft. Installed baseline system on flight test aircraft and on aircraft from an operational squadron. Began flight testing of system.
- Military Operations in Urban Terrain (MOUT): Refurbished CD equipment and began the two-year interim capability/extended user evaluation (EUE) period. Provided user evaluation information to appropriate combat and materiel development communities to support transition of products and requirements. Extended the experimentation phase, focusing on partially met and unmet requirements.
- Rapid Terrain Visualization (RTV): Completed final version of rapid terrain data generation software (Build 5.0). Acquired and processed data over Continental United States (CONUS) sites and the Republic of Korea. Installed Build 5.0 software at XVIII and III Corps. Extended capabilities to units in Germany and Hawaii, and NIMA. Completed transition plan for operation of RTV sensors / aircraft. Initiated effort to transition sensors to unmanned aerial vehicle (UAV) platforms. Concluded the interim capability period to end the ACTD.

FY 1998 Starts:

- Adaptive Course of Action (ACOA): Continued multiple CINC, coalition and interagency-level software integration. Demonstrated military utility of the

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complete ACOA system during a joint exercise. Completed integration, hardening and transition into GCCS with delivery of the final version of ACOA. Delivered system includes improved versions of Web Planner, Odyssey, the Campaign Object server, Geospatial Force Planning Tool, Virtual Books, Intelligent Process Management, and Facilitate.com. Began interim capability support phase.

- C4I for Coalition Warfare (C4I for CW): Conducted a major demonstration of the coalition interoperability gained with ACTD message formatting and database replication, which included the United States, United Kingdom (UK), France, Germany, Italy and Canada as participants. This was in the form of a field exercise. The developed capability was fully integrated into the Maneuver Control System (MCS) for initial fielding during Fiscal Years 2001/2002.
- Information Assurance: Automated Intrusion Detection Environment (IA:AIDE): Installed AIDE workstations and corresponding suite of intrusion detection sensors at twelve CINC, Service, and Agency sites in support of the final demonstration and military utility assessment (MUA). The Operational Manager (OM) from STRATCOM provided a very positive MUA. In addition, the OM also validated the AIDE Concept of Operations (CONOPS) for initial operational capability. Continued upgrades and new releases of AIDE, incorporating improved and/or hardened correlation, visualization, and data mining tools, software licensing and hardware maintenance.
- Joint Biological Remote Early Warning System (JBREWS): Provided remote detection and warning of biological agents for a brigade-size assembly area for installation and support in theater. Concluded the interim capability support period to end the ACTD.
- Joint Continuous Strike Environment (JCSE): Conducted MUA in Fleet Battle Experiment India and Korean exercises. Completed software build four, began DII-COE compliance testing and build five with fully distributed processing. Conducted simulation-driven stress and interface test.
- Joint Modular Lighter System (JMLS): Concluded ACTD short of Military Utility Assessment due to system design shortfalls. Technologies developed as a part of the ACTD transitioned to the Navy's JMLS development program.
- Line-of-Sight Anti-Tank (LOSAT): Completed two early risk reduction missile flight tests utilizing residual inertial measurement unit (IMU) and guidance electronics hardware from earlier verification tests and a fire unit structurally representative of the final design. Completed design changes to fire unit and missile assembly designs as a result of the operational requirements document (ORD) and prepared for final program design review. Completed tool design and fabrication. Updated software requirement analyses and began detailed design updates to incorporate software modifications to reflect ORD updated requirements.
- Link-16: Continued operational support to the Combined Air Operations Center (CAOC) in Kosovo. Completed development of DoD Joint Data Network (JDN) multi-TADIL (Link 11 and Link 16) translation and data forward efforts. Conducted a Joint Service Certification of the Rosetta multi-TADIL (Link 11/Link 16) functionality. Conducted a Joint Service Certification of the Rosetta Link 16/JVMF Version 3.3.3. Successfully transitioned Rosetta technology to United States Joint Service Acquisition program. Completed integration efforts with Precision Targeting Identification ACTD, and conducted a demonstration. Planned commencement of Rosetta technology into the Loitering Electronic Warfare Killer (LEWK) ACTD as the communications node for the tactical UAV payload. Ended the ACTD.
- Migration Defense Intelligence Threat Data System (MDITDS): Completed design for interface of MDITDS and Joint Risk Assessment Management Program (JRAMP) and evaluated it and the deployable server. Conducted a Beta II/ Force Protection Demonstration in conjunction with a field training exercise.
- Precision Target Identification (PTI): Conducted laboratory test and operational deployment of the PTI remote surveillance systems. Conducted flight evaluation of the PTI Laser Radar (LADAR) system. Conducted negotiations for multi-year cooperation agreement with Ministry of Defense, UK for

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fighter-based LADAR. Completed Link-16 ROSETTA integration with PTI track correlation processor. Conducted C-130 roll-on/roll-off (RO/RO) prototype system deployment for the Air National Guard (ANG). Conducted operational demonstration of the RO/RO radar for the P-3 aircraft.

- Space Based Space Surveillance Operations (SBSSO): Transferred post-SBSSO ACTD dedicated sensor operations to Air Force Space Command. Transferred the space asset (MSX) from the Ballistic Missile Defense Organization (BMDO) to U.S. Space Command (USSPACECOM). Concluded the interim capability period to end the ACTD.
- Theater Precision Strike Operations (TPSO): Conducted the Transition-to-Reinforcement assessment, the third in series of user demonstrations/evaluations.
- Unattended Ground Sensor (UGS): Completed transition to acquisition. Concluded the interim capability period to end the ACTD.

FY 1999 Starts:

- Battle Damage Assessment in Joint Targeting Toolbox (BDA in JTT): Developed software architectural “backbone” with limited ground force models/algorithms. Integrated BDA software into JTT version 3. Conducted initial USCENTCOM functional review and capability demonstration.
- Coherent Analytical Computing Environment (CACE): Implemented data warehouse capabilities to provide status-on-demand-to-decision support tools and provided source data to the mission-sensitive aircraft resumes. Developed the user interface to provide the commander cross-functional planning tools. Integrated CACE tools and provided the integrated CACE architecture to Naval aviation community for extended evaluation. Developed Joint Strike Fighter Program Office impact assessment. Updated Transition Plan. Implemented group level functionality with deployment option.
- Common Spectral MASINT Exploitation (COSMEC): Demonstrated the utility of spectral data with operational assets. COSMEC ground stations were implemented in the European Command (EUCOM), as well as the support of tactical airborne sensors. Integrated the COSMEC system into the digital common ground station (DCGS) architecture and developed a COSMEC V2.0 for support of National Air Intelligence Center (NAIC) and operational users.
- Compact Environmental Anomaly Sensor II (CEASE II): Demonstrated mission support. Launched CEASE sensor aboard Defense Support Program satellite and performed system on-orbit calibration and user support. Developed operational concepts for distributing environmental data.
- Force Medical Protection/ Dosimeter (FMP/D): Tested four technology candidates. Developed concepts of operations for the use of real-time and non-real-time chemical and biological threat agent samplers and monitors for use by individuals. Conducted three field demonstration venues employing the Individual Passive Chemical Sampler (IPCS), the Lightweight Biological Aerosol Sampler/Analyzer (LBASA), the Individual Chemical Alarm System (ICAS), individual sampler surrogates and threat simulants.
- Human Intelligence (HUMINT) and Counterintelligence (CI) Support Tools (HICIST): Assessed CONOPS, equipment and architecture in Joint Warfighting exercises, real world support, and Army HUMINT and counter-intelligence exercises. Defense Intelligence Agency (DIA) committed to transition of HUMINT/CI Analytic Support Cell and Chem-Bio Intelligence Support Team. Two ACTD products approved for Army Rapid Acquisition Program. J2-X Concept of Operations and training module delivered to relevant organizations and CINCs.
- Joint Medical Operations – Telemedicine (JMO-T): Completed capstone demonstration of integrated JMO-T capabilities. Completed the initial military utility assessment. Demonstrated integrated modeling and simulation capabilities for deploying medical forces. Identified leave behind capabilities and deployment strategy.
- Joint Theater Logistics (JTL): Expanded capability to integrate in-theater distribution support planning and infrastructure assessment and compared alternative courses of action. Created temporal task identification and support force assignment. Assessed the impact of deviations and alternative support

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concepts upon future operations.

- Personnel Recovery Mission Software (PRMS): Completed integration and conducted operational assessment at CENTCOM's Internal Look 01 exercise. Completed lessons learned revisions from Internal Look 01 and began delivery of user leave-behinds. Initiated transition activity and ended the ACTD.
- Small Unit Logistics (SUL): Final demonstration conducted during Desert Knight. Received interim authority to operate until final fielding approved. Began the interim capability period for the ACTD.
- Theater Air and Missile Defense Interoperability (TAMDI): Conducted user assessment of the AEGIS/PATRIOT integrated air picture capability through a real-time, engage-on-remote demonstration. Collected Theater High Altitude Area Defense (THAAD)/Cooperative Engagement Capability (CEC) integration data and prepared integration approach and concept. Initiated single, integrated air-picture evaluation by integrating existing sensor systems in Korean theater of operations.

FY 2000 Starts:

- Coalition Aerial Surveillance and Reconnaissance (CAESAR): Participated in a live-fly exercise in Europe and evaluated the interchange format, registration algorithms, and moving target indicator (MTI) association, correlation and tracking algorithms. Continued development and integration of MTI-Synthetic Aperture Radar (SAR) cueing algorithms, the MTI-SAR common operational picture (COP), mission planning and tasking tools, CONOPS and tactics, techniques and procedures. Conducted simulation-driven laboratory test of tracking algorithms.
- CINC 21: Performed successful demonstration of key knowledge management, visualization, and collaboration technology in Kernel Blitz exercise in support of Pacific Command's (PACOM's) Joint Mission Force concept. Implemented CINC-to-Joint Task Force (JTF) and component dynamically-shared plans and situation awareness. Continued joint coalition development of interoperable knowledge sharing. Delivered spirals I and II of the CINC 21 hardware/software infrastructure and mission packages.
- Communication/Navigation Outage Forecasting System (C/NOFS): Initiated on-orbit sensor fabrication.
- Computerized Operational MASINT Weather (COMWx): Demonstrated and continued to validate algorithms to exploit Computerized Operational MASINT Weather products at theater level. Improved infrastructure for dissemination of data to theater. Began development of CONOPS for use of products in theater. Continued development of future sensor requirements.
- Content-Based Information Security (CBIS): Completed development and test of the Phase I (data-in-transit) module of the Security Card. Completed development of the cryptographic Key Management product with National Security Agency (NSA). Initiated design of the Phase II (data-at-rest) module of the CBIS security card. Formed a CONOPS working group.
- Global Monitoring of Space ISR Systems (GMSIS): Established architecture for data acquisition and processing and began planning for the demonstration phase. Collected sample data for capability development.
- Ground-To-Air Passive Surveillance (GAPS): Completed the analysis of FY 2000 environmental assessment measurements to derive guidance concerning demonstration system specification and future assessment testing of an airborne target tracking system compatible with counter drug/asymmetric warfare requirements. Conducted demonstrations of various sensors in support of asymmetric warfare in San Diego. Conducted a preliminary evaluation of an autonomous acoustic sensor system for counter drug/asymmetric warfare applications during the Fleet Battle Experiment – India.

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- Joint Intelligence, Surveillance and Reconnaissance (JISR): Established baseline capability with virtual/man-in-the-loop demonstrations. Integrated software on prototype hardware and participated in initial field demonstrations. Continued to demonstrate capabilities at both ARCENT's Lucky Sentinel Exercise and 1 Marine Expeditionary Force (1 MEF) Exercise (MEFEX).
- Multiple Link Antenna System (MLAS): Reduced scope of ACTD to accommodate approved funding level. Completed design refinements for radio frequency component elements. Initiated fabrication, lab tests and early interim assessments of improved elements. Initiated design of demonstration antenna system. Initiated design of antenna control system software and system integration. Continued systems engineering efforts leading to antenna configuration demonstrations and field tests. Conducted instrumented range tests to investigate true-time-delay and beam steering technical issues. Initiated CONOPS development and demonstration planning. Investigated potential transition opportunities.
- Quick Bolt: Continued design reviews, system integration and system testing of the components of the front-end guidance mechanisms.
- Restoration of Operations (RestOps): Completed Joint Chemical Field Trials and technology assessments. Developed and conducted the baselining exercise. Refined methodology for operational capability assessment and planned for technology transition.
- Tri-Band Antenna Signal Combiner (TASC): Completed fabrication and acceptance testing of antenna signal combiner. Began detailed planning for military utility assessment and field trials. Initiated planning for transition to acquisition.

FY 2001 Starts:

- Active Network Intrusion Defense (ANID): Developed agent framework for ANID system architecture, and determined collaborative interfaces for select ANID technologies. Collected and correlated user requirements. Developed software requirements specification and draft CONOPs. Determined the initial interfaces to exterior data sources such as sensors and firewalls. Installed and demonstrated a prototype ANID system on the Defense Information Systems Network-Leading Edge Services (DISN-LES), consisting of agent framework component, correlation of data, and dynamic constitution of a virtual organization.
- Adaptive Battlespace Awareness (ABA): Enhanced COP track data structures and developed improvements to track management tools and common operational picture (COP) synchronization tools. Prepared demonstration of these enhancements for demo sites to "tag" data structures with amplifying information, i.e., targeting status and other relevance indicators for specific situations, events or tasks.
- Advanced Tactical Laser (ATL): Designed laser assembly, fuel system, and optics to fit in a roll-on/roll-off package for the CV-22 aircraft. Validated current laser performance and stability.
- Advanced Technology Ordnance Surveillance (ATOS): Developed concept of operations, finalized system requirements, and released a request for proposal (RFP) for commercial-off-the-shelf radio frequency identification (RFID) and micro-electro-mechanical systems (MEMS) technologies to develop and demonstrate RFID/MEMS technology for monitoring ordnance inventory and environmental data.
- Area Cruise Missile Defense: Conducted Joint-Based Expeditionary Connectivity/Control Center (JBECC) demonstration #1 to baseline the JBECC prototypes. Completed system integration demonstration planning, execution and analysis.
- Coalition Combat Identification (CCID): Initiated Single Channel Ground and Airborne Radio System (SINCGARS)-based combat identification (SBCI) radio software upgrades. Initiated integration of improved SBCI waveform into Fire Support Team (FiST) system. Evaluated potential implementation of SBCI into allied digital radios including the UK Bowman radio. Coordinated Allied (France, UK, Germany) participation in the ACTD. Initiated

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- development of Standard NATO Agreement (STANAG) 4579 compliant waveform. Defined dismounted soldier efforts with Allies.
- Coalition Theater Logistics (CTL): Commenced ACTD development efforts. Established program development organizations and working groups. Developed the ACTD management plan, project arrangement with Australia and defined technical and operational requirements. Conducted business process review to model coalition theater logistics concepts. Began CTL CONOPS development. Conducted a concept demonstration using Joint Logistics ACTD tools and demonstrated the Australian Logistics Encyclopedia.
- Coastal Area Protection System (CAPS): Demonstrated the feasibility of deploying technologies in the coastal/littoral areas for force protection. The system demonstrations consisted of technologies to support the surveillance, identification and exclusion of threats in the vicinity of ports and harbors. Concluded demonstrations to end the ACTD.
- Hunter Standoff Killer Team (HSKT): Integrated cognitive decision aiding technologies into the Army Airborne Command and Control System (A2C2S) to develop Mobile Commander's Associate (MCA) capability and also into the Longbow Apache helicopter to develop Warfighter's Associate (WA) capability. Integrated manned and unmanned teaming algorithms and software into the MCA and WA systems. Developed Link 16 data terminal for the Joint Standoff Weapon (JSOW) to provide enroute targeting updates for weapons delivery. Conducted preliminary design of sensor package for integration into unmanned aerial vehicle.
- Joint Area Clearance (JAC): Obtained and prepared area clearance technologies. Developed draft tactics, techniques, and procedures (TTPs) for the technologies. A successful small-scale Red Force/Blue Force 30-day demonstration was conducted at Fort A.P. Hill with the CamCopter Change Detection technology. Integrated Product Teams (IPTs) were created to manage the four main IPTs (Technology, Assessment, CONOPs, and Transition IPTs).
- Loitering Electronic Warfare (EW) Killer (LEWK): Established Integrated Product Teams. Began preparation of the Functional Requirements Document (FRD). Awarded contract to finalize sub-systems and systems design, and began integration and testing.
- Network Centric Collaborative Targeting (NCCT): Initiated Phase I NCCT Core Technology (NCCT Network Controller and ISR Sensor Manager) development to rapidly synchronize multiple intelligence, surveillance, and reconnaissance (ISR) assets and sensors on time sensitive targets (TSTs), supporting actionable quality information for tactical commanders. Delivered initial NCCT Message Catalog and preliminary Interface Control Document to airborne platform and ground station participants.
- Personnel Recovery Extraction Survivability Aided by Smart Sensors (PRESS): Conducted studies to integrate Global Personnel Recovery System (GPRS) Public and Government segments, RF Tags, and Combat Survivor Evader Locator (CSEL) Radio systems. Participated in development of Analysis of Alternatives (AoA) with Space Command (SPACECOM) and Air Combat Command (ACC) on extraction survivability and situational awareness technologies.
- Tactical Missile System –Penetrator (TACMS-P): Began detailed engineering of the missile system.
- Theater Integrated Planning Subsystem (TIPS): Acquired and integrated available commercial-off-the-shelf (COTS) information technology (software and hardware) to provide first automated theater planning capability to support theater CINCs. Core functions and infrastructure to support the deliberate planning process for conventional weapons have been installed on the new theater-planning Systems Integration Laboratory suite.

(U) **FY 2002 Plans:** (U) Department ACTD goals in FY 2002 include initiation of additional ACTDs, restructuring OSD contributory funding for new ACTDs where necessary to encourage service/agency participation, and provision of additional funding for expanded user evaluations (EUEs) at the conclusion

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of successful ACTDs. OSD will continue the annual process of developing and structuring new candidate ACTDs to rapidly address user needs and address issues identified in *Joint Vision 2020*. In FY 2002, the ACTD nomination, screening and validation process will be accelerated to permit earlier Service planning for transition of successful ACTDs into acquisition programs. Some ACTDs will remain deployed in the Kosovo Theater as part of ongoing peacekeeping operations. A significant number of ACTDs have found operational employment in the war to counter terrorism. Several ACTDs will continue deployment in support of Operations Enduring Freedom and Noble Eagle, as well as Homeland Security activities. ACTD projects are continually screened for applications that should be accelerated to support time-sensitive warfighter requirements. Funding will continue for all ongoing ACTDs, including the new FY 2002 ACTDs, for a total of \$157.762 million. In addition to appropriating funds for ACTDs, Congress added \$3.5 million to FY02 funding to pursue demonstration of Syntroleum technology (Flexible JP-8 Pilot Plant) .

(U) Other significant plans for FY 2002 are:

FY 1996 Starts:

- Air Base/Port Biological Detection: Conclude the interim capability period and end the ACTD.
- Joint Logistics: Conclude the interim capability period and end the ACTD.
- Tactical High Energy Laser: Conclude the interim capability period and end the ACTD.

FY 1997 Starts:

- Counterproliferation II: Execute two operational demonstrations/military utility assessment (MUA) of AGM-86D CALCM penetrator against a hardened, simulated chemical production facility. Complete HTSF sled testing. Complete BLU-116 AUP sled testing and obtain target response data from tests of the AUP against hardened, simulated weapons of mass destruction (WMD) facility. Complete TTPV critical design review (CDR) and continue sled testing to verify penetration capability. Execute the second JASSM demonstration against a simulated biological weapons facility. Continue Chemical Combat Assessment System (CCAS) testing. Complete Integrated Target Planning Tool Set (ITPTS) version 1.0. Accelerate some elements for use in current, real-time operations.
- Extending the Littoral Battlespace: Complete military utility assessment. Refurbish and reinstall partial ELB ACTD-configuration TEMPALT to TARAWA ARG / 15th Marine Expeditionary Unit and Constellation Battle Group (CVBG) for 2nd Quarter FY 2003 deployment. Install ELB Tier 2 configuration to Theodore Roosevelt Battle Group for 3rd Quarter FY 2004 deployment, as part of IT21 Block I upgrade. Enter lessons learned and performance data into appropriate databases/finalize ELB technical documentation. Continue transition efforts with appropriate Joint/Naval/USMC/Army acquisition programs.
- Integrated Collection Management: Conclude the interim capability support period to end the ACTD.
- Joint Advanced Health and Usage Monitoring System: Complete flight test verification and begin operational demonstration. Provide aircrew training. Develop Joint Service/Industry health and usage monitoring system (HUMS) cost/benefit analysis model. Conduct Opens Systems Architecture assessment for the DOD Open Systems Joint Task Force.
- Military Operations in Urban Terrain: Continue to provide support to residual equipment in the extended user evaluation phase. Collect data for refinement

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of tactics, techniques, procedures and requirements. Continue limited experimentation, focusing on partially met and unmet requirements. Complete transition activities and end the ACTD.

FY 1998 Starts:

- Adaptive Course of Action: Complete final hardening and transition of the entire ACOA system to the Global Command and Control System. Complete transition of ACOA operations and maintenance responsibilities to Defense Information Systems Agency (DISA). Conclude interim capability support period to end the ACTD.
- C4I for Coalition Warfare: Participate in the Communications Interface Design (CID) Borealis demonstration. Conduct a demonstration of the database replication capability with the United States, Canada, Denmark, France, Germany, Italy, the Netherlands, Spain and the United Kingdom. A fielding decision on the database replication mechanism will be made based on the demonstration results. Conclude the interim capability support period to end the ACTD.
- Information Assurance: Automated Intrusion Detection Environment: Sustain AIDE residual system currently resident in twelve sites. Per operational requirements, begin transition of AIDE to other operational components, i.e., PACOM, EUCOM. Integrate web-based multimedia online training aids into the AIDE system. Continue with the transition planning, configuration and releasability control. Conclude the interim capability support period to end the ACTD.
- Joint Continuous Strike Environment: Conduct several military utility assessments in live exercises. Transition to relevant Service fire support systems and Joint Targeting Toolkit and provide technical support. Conclude the ACTD.
- Line-of-Site Anti-Tank: Conduct final design reviews for fire unit, missile, and training equipment, and begin fire unit and missile component fabrication. Conduct component qualification testing, begin sub-assembly of components, and prepare for final integration and assembly. Complete weapon system module and weapon system test-set software code and test, and finalize requirements for missile operational flight software.
- Migration Defense Intelligence Threat Data Systems: Conduct final military utility assessment of Joint Risk Assessment Management and deployable server. End the ACTD.
- Precision Targeting Identification: Complete negotiations with MoD UK for Joint US/UK fighter LADAR ID program and complete aircraft integration design/fabrication. Conduct utility assessment of the C-130 RO/RO system for ANG and complete operational system design.
- Theater Precision Strike Operations: Commence interim capability support period.

FY 1999 Starts:

- Battle Damage Assessment in Joint Targeting Toolbox (BDA in JTT): Continue development of software architecture, apply additional technology, increase functionality and expand fielded ground force models/algorithms.
- Coherent Analytical Computing Environment: Implement data warehouse data-mining capabilities to provide source data to the mission-sensitive aircraft resumes. Develop reasoners and agents which provide command-level decision support. Update the immersive user interface to provide the commander a

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unified view of the squadron operations and provide an interface to all planning tools. Integrate CACE tools and provide the integrated CACE architecture to USMC aviation community for extended evaluation. Update Joint Strike Fighter Program Office impact assessment. Update Transition Plan.

- Common Spectral MASINT Exploitation: Continue integration into the Digital Common Ground Station (DCGS) architecture.
- Compact Environmental Anomaly Sensor II: Conduct user and operational utility assessments.
- Force Medical Protection/ Dosimeter: Complete testing, demonstration venues and the Military Utility Assessment. Present final recommendations. Field and maintain residual capability with operational units. Implement plans to transition CONOPS and products with military utility in detecting and identifying chemical/biological threats for individuals or groups. End the ACTD.
- Human Intelligence and Counterintelligence Support Tools: Deliver products to Defense HUMINT Service, appropriate elements of the Services and other customers of ACTD transitions. Finalize Concepts of Operation and Impact Assessments. Support product participation in exercises and real-world operations.
- Joint Medical Operations-Telemedicine: Transition JMO-T capabilities for the CINC or designated component surgeon in accordance with selected deployment strategy; insert available Theater Medical Information Program (TMIP) capabilities to replace JMO-T placeholder capabilities; implement operations support systems; and continue assessment of JMO-T technologies capabilities.
- Joint Theater Logistics: Focus technology upon execution tracking processes and demonstrate initial Watchboard capabilities. Demonstrate capabilities in a joint environment and conduct preliminary military utility assessment. Staff and finalize transition plans to transfer JTL ACTD capabilities to GCSS through the AITS-JPO.
- Personnel Recovery Mission Software: Continue software refinements based on inputs from customer operational testing. Complete fielding and support of PRMS to end the ACTD.
- Theater Air and Missile Defense Interoperability: Report military utility assessment of the engage-on-remote aspects. Finish fabrication and installation of limited single integrated air-picture capability.

FY 2000 Starts:

- Coalition Aerial Surveillance and Reconnaissance: Conduct a military utility assessment in a live-fly European exercise and produce measures of performance/effectiveness analysis. Begin insertion of CAESAR functionality into participating country's ground stations. Produce and transition Concept of Operations and tactics, techniques and procedures to participating nations and SHAPE.
- CINC 21: Demonstrate in Tempo Brave exercise a highly visual, dynamically updated capability to develop and understand the CINC's theater situation, plans, and execution status during multiple, simultaneous crises involving joint, coalition, and humanitarian agencies based on shared knowledge and collaboration across secure and optimized networks. Deliver final development spiral to the implementation and operational teams for verification, validation and military utility assessment.
- Content-Based Information Security: Complete and demonstrate the Phase II (data-at-rest) module of the security card (separate from the data-in-transit security card). Finalize the development of the CBIS CONOPS and military utility assessment plan. Upgrade the CBIS Key Management product as needed.
- Communication/Navigation Outage Forecasting System: Construct satellite sensors and integrate system.
- Computerized Operational MASINT Weather: Complete dissemination architecture for dissemination of data to theater. Integrate validated algorithms into

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infrastructure. Validate products/CONOPS for use of products for warfighter support. Demonstrate capability to operational user and refine products/CONOPS. Further refine future sensor requirements.

- Content-Based Information Security: Demonstrate the Phase I (data-in-transit) module of the security card. Complete the development of the Phase II (data-at-rest) module of the security card. Continue development of the CBIS CONOPS and develop a draft of the military utility assessment plan. Complete development of a prototype CBIS Key Management product.
- Global Monitoring of ISR Space Systems: Demonstrate capability with deployed assets.
- Ground-To-Air Passive Surveillance: Acquire an advanced passive coherent location system (Silent Sentry III) and conduct initial validation testing. Conduct operational assessment of passive surveillance systems for counter drug /asymmetric warfare applications; specifically, passive coherent location for airborne targets and passive autonomous acoustic sensors for surface targets. The users will be trained on the system and participate in real-time inter-operation with the existing command and control functions.
- Joint Intelligence, Surveillance and Reconnaissance: Demonstrate baseline solution (based upon user defined TTP/CONOPS) at Lucky Sentinel 02, Marine Expeditionary Force Exercises (MEFEX) and brigade-level venues. Select, integrate, and conduct end-to-end demonstration of non-traditional sensor feed(s). Provide modeling and simulation support to Lucky Sentinel 02, MEFEX and brigade-level venues. At request of USCENTCOM, deploy to support current, real-time operations.
- Multiple Link Antenna System: Complete design of antenna control system software. Complete design, fabrication, integration, and lab tests of MLAS demonstration system. Continue CONOPS development and establish concept of demonstration. Initiate MLAS demonstration in lab and field environments. Refine options for transition to acquisition.
- Quick Bolt: Commence lab and field test demonstrations of a fully integrated Quick Bolt system.
- Restoration of Operations: Conduct preliminary demonstration and initial military utility assessment. Continue user training and limited system functional tests. Revise concept of operations. Conduct final technology selection.
- Tri-Band Antenna Signal Combiner: Conduct Military Utility Assessment (Millennium Challenge 02). Report on military utility of system. Conclude interim capability support period to end the ACTD. If warranted, transition to procurement.

FY 2001 ACTDs:

- Active Network Intrusion Defense: Continue gathering user requirements. Refine detection, correlation, and notification agents and collaborative interfaces. Provide automated support to convene experts, information, command-by-negation, and to build rapid coordinated responses via a distributed “virtual” cyber warfare organization. Demonstrate autonomic tracing by focusing initially on instrumentation of a portion of the Global Command and Control System (GCCS) global configuration with autonomic response and anomaly sensors. Exercise the virtual organization CONOPS.
- Adaptive Battlespace Awareness: Develop the necessary intelligence/operational interfaces and the supporting mission-specific, user-tailorable templates required to facilitate the display of information relevant to the task or area of interest. Demonstrate these capabilities in the EUCOM area of responsibility.
- Advanced Tactical Laser: Begin fabrication of high power laser system, fuel supply and optics train for integration into CV-22 aircraft. Evaluate fuel regeneration system and closed loop performance of laser.
- Advanced Technology Ordnance Surveillance: Develop the integrated radio frequency identification (RFID) and micro-electro-mechanical systems

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- (MEMS) system. Develop an environmental and pre-processor database. Conduct component-level testing.
- Area Cruise Missile Defense: Conduct ‘Cruise Missile Prosecution’ demonstration #2 in conjunction with the JSCIET 02 Exercise. Exercise the entire cruise missile kill chain of events (find-fix-track-target-engage-assess). Completed JBECC CONOPs refinement. Commenced tactics, techniques and procedures development and JBECC deployment planning.
- Coalition Combat Identification: Continue SBCI radio software upgrades for U.S. exportable radios. Continue SBCI / FiST system integration. Continue NATO compliance development of International Interoperability Testbed. Initiate integration of SBCI with USMC Target Location and Data Handoff System (TLDHS). Initiate international initiative for combat ID for the individual soldier. Begin software model development for the Virtual Operational Exercise for all technologies and all countries. Participate in JCIET 02 with Allies.
- Coalition Theater Logistics: Develop security and network architecture to support coalition logistics data fusion. Continue CONOPs development. Assess and select applications from Joint Theater Logistics for use in the coalition task force environment. Identify coalition partner logistics information systems interfaces and applications. Demonstrate initial capabilities and measure performance against the CTL ACTD CONOPS. Develop transition plans to GCSS.
- Hunter Standoff Killer Team: Continue software builds and simulation tests for MCA and WA. Conduct hardware in the loop integration tests. Install remote target sensor (TOPART) into unmanned aerial vehicle. Integrate fully functional Link 16 data link, antenna and guidance software into the F/A-18 Joint Standoff Weapons (JSOW) system. Integrate F/A-18 Advanced Technology Forward Looking Infrared Radar (ATFLIR).
- Joint Area Clearance (JAC): Conducted a technical demonstration and progressed into two-training/rehearsal demonstrations. Conducted first service demonstration. Data from these exercises will form the basis of an interim military utility assessment in mid-FY 2003.
- Lethal Electronic Warfare Killer: Finalize the Functional Requirements Document. Begin preparation of the transition plan. Continue sub-systems and systems integration and testing. Begin initial flight testing of the vehicle without payloads.
- Network-Centric Collaborative Targeting: Continue NCCT Core Technology development by migrating NCCT capability into the NCCT System Integration Laboratory (SIL). Initiate Participant Integration Module (PIM) development by airborne platform and ground station prime contractors. Integrate NCCT Communications Equipment (NCE) required for Phase II demonstration into NCCT design. Conduct Phase I demonstration to baseline and collect data for time-sensitive target (TST) collaborative cross-cueing timelines and performance using existing datalinks and current Tactics, Training, and Procedures (TTPs).
- Personnel Recovery Extraction Survivability Aided by Smart Sensors: Design GPRS space hardware for integration on GPS Block III in FY04. Develop initial prototype design of miniature GPRS user device. Demonstrate integration and interoperability of GRPS, CSEL and PRMS as part of Millennium Challenge/JEFX 2002. Conduct military utility assessment of Phase I survivor / evader systems. Based on priorities determined by WALEX, begin coordination, design, and integration of aircraft technologies on HH-60G Pavehawk. Technologies being evaluated include CDA, IRCM, millimeter wave imaging, obstacle avoidance, and non-lethal weapon subsystems.
- Tactical Missile System – Penetrator: Continue fabrication and ground testing of missile system components.
- Theater Integrated Planning System: Deploy and operate conventional planning capability. Develop, integrate and deploy nuclear planning capability. Integrate a software workflow manager into both the conventional and nuclear environments. Initial analysis will begin on the migration of theater planning tools to support a deployable configuration of TIPS.

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FY2002 ACTDs:

- Active Denial System (ADS): Upgrade the system-zero device capability with a higher efficiency level source. Demonstrate frontal exposures of human subjects at full weapons parameters.
- Advanced Notices: Classified content only.
- Agile Transportation (AT): Establish an initial collaboration environment for receiving and scheduling Defense Transportation System (DTS) requirements. Establish requirements for a DTS virtual data environment.
- Contamination Avoidance at Seaports of Debarkation (CASPOD): Finalize initial system design and integration. Prepare for preliminary demonstrations.
- Coalition Information Assurance Common Operational Picture (CIA COP): Prepare for initial demonstrations with U.S. Space Command.
- Expendable Unmanned Aerial Vehicle (XUAV): Complete integration design and fabrication of prototype vehicle and avionics. Demonstrate initial capability.
- Homeland Security Command and Control (HLS C2): Demonstrate new concepts for C2 and early warning, as well as coordination of escalating security actions for the U.S. against unconventional threats. These actions will be constrained to a single response team simulated over the DISN with the DoD and other federal, state and local agencies.
- Hyperspectral Collection and Analysis System (HYCAS): Demonstrate the taggant sensor capability. Develop exploitation algorithms and a tactical hyperspectral sensor.
- Joint Explosive Ordnance Disposal (JEOD): Complete architecture development. Conduct baseline exercises. Develop JEOB Mission Support Center.
- LASER Language Translator (LASER): Identify foreign language translation requirements, survey technologies and correlate requirements and technologies. Design projects and initiate development, integration and modification.
- Micro Air Vehicle (MAV): Fabricate and deliver 25 Phase I battery-electric systems (one user interface and three air vehicles per system). Commence Phase I field evaluations.
- Pathfinder: Conduct initial technology search and evaluation of component technologies immediately available for application to sensors, UAVs/UGVs, adaptive networks, communications, data fusion and displays. Commence limited objective experiments (LOEs) on component technologies.
- Signals Intelligence (SIGINT) Processing: Classified content only.
- Space-Based Moving Target Indicator (SBMTI): Develop and integrate MTI signal processing software and tasking software.
- Thermobarics (TB): Conduct payload development program.

(U) **FY 2003 Plans:** Continue the process of transitioning and initiating ACTDs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. Funding will continue for active ACTDs initiated in Fiscal Years 1997 through 2002 (\$159.580 million) that have not been completed or transitioned to acquisition programs. Funding available for initiating new FY 2003 ACTDs, after subtracting for previous years ACTDs, will be approximately \$40 million. (\$199,580 million).

FY 1997 ACTDs:

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- Counterproliferation II ACTD: Execute final two ACTD operational demonstrations using a hardened, cut-and-cover simulated chemical production and storage facility and the TTPV, CCAS and ITPTS Version 2 ACTD products. Perform MUAs on the TTPV, CCAS and ITPTS. Produce four CCAS ACTD-residual modification kits. Transition TTPV to EMD. Complete the interim capability support phase and end the ACTD.
- Extending the Littoral Battlespace: Complete refurbishment and installation of partial ELB ACTD-configuration to TARAWA ARG / 15th MEU and Constellation Battle Group (CVBG) for deployment. Complete installation of ELB Tier 2 configuration to Theodore Roosevelt Battle Group for 3rd Quarter FY 2004 deployment, as part of IT21 Block I upgrade. Continue transition efforts with appropriate Joint Navy / USMC / Army acquisition programs.
- Joint Advanced Health and Usage Monitoring System: Install additional systems and support operational demonstration. Collect operational data for health and usage monitoring system (HUMS) technology assessment and cost/benefit analysis.

FY 1998 ACTDs:

- Line-of-Sight Anti-Tank: Complete Fire Unit and Missile Prototype hardware fabrication and assembly. Complete Fire Unit and Missile Software system level test and certification. Conduct missile flight tests, and Fire Unit qualification testing. Conduct limited objective user experiments for air transportability and force-on-force survivability to support assessment of military utility.
- Precision Targeting Identification: Commence interim capability support phase.
- Theater Precision Strike Operations: Conclude the interim capability support phase to end the ACTD.

FY 1999 ACTDs:

- Battle Damage Assessment in the Joint Targeting Toolbox: Conclude interim capability support phase to end the ACTD.
- Common Spectral MASINT Exploitation: Commence interim capability support period.
- Human Intelligence and Counterintelligence Support Tools: Complete ACTD transitions and support their use in exercises and real world operations. Conclude the ACTD.
- Joint Medical Operations-Telemedicine: Refine logistical support concepts and operational TTPs; finalize transition documentation; complete extended user evaluation and MUA.
- Joint Theater Logistics: The DARPA/DISA AITS-JPO will fund and manage transition of the JTL ACTD to DISA GCSS. The JPO will maintain Pilot Services designed to permit the war fighter to use the products until the products are fully integrated into GCSS.
- Theater Air and Missile Defense Interoperability: Conclude interim capability support phase to end the ACTD.

FY 2000 ACTDs:

- CINC 21: Work with PACOM's J6 as well as the GCCS and NMCI program offices to begin technology transition activities for CINC 21 products. Support and sustain residual leave behind capabilities in PACOM and STRATCOM commands. Begin drafting final reports.
- Coalition Aerial Surveillance and Reconnaissance: Begin transition of CAESAR products to the participating nations, NATO and SHAPE. Products include: Tools, e.g. trackers and coalition testbed; Operational Concepts for interoperability (TTPs, MOEs, MOPs) and; Architecture and design (interfaces, ICDs and Standard NATO Agreements (STANAGs)).

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- Coherent Analytical Computing Environment: Determine military utility and complete demonstration of planning and maintenance tools. Develop final architecture report and transition plan. Refine the CACE leave behind tools.
- Communication/Navigation Outage Forecast System: Conduct payload test, spacecraft integration and launch.
- Computerized Operational MASINT Weather: Implement suggested improvements to algorithms/infrastructure as a result of operational demos in FY02. Coordinate/forward CONOPS and future sensor requirements to appropriate parties. Operations and maintenance for ACTD infrastructure developed.
- Content-Based Information Security: Perform the MUA of CBIS technology and CONOPs. Work with JFCOM's J6, the Navy's DD21 program office, and NSA and NRL to begin technology transition activities for CBIS multi-level security products. Support and sustain residual leave behind capabilities. End the ACTD.
- Global Monitoring of ISR Systems: Complete system development and demonstrate military utility of interim system.
- Ground-To-Air Passive Surveillance: Complete operational assessment of passive coherent location (PCL) technology. The assessment will include operational user training and support. Finish the demonstration and assessment of passive autonomous acoustic sensors. Provide final assessment reports.
- Joint Intelligence, Surveillance and Reconnaissance (JISR): Refine and Enhance JISR interfaces to source systems based upon user defined TTP/CONOPS (Lucky Sentinel 03, MEFEX 03, Ulchi Focus Lens 03). Integrate fielded JISR prototype into Army Brigade evaluation. Continue working relationships with PM IF and other program offices to include TES/NFN, Joint Digital Fires Network and Digital Common Ground Station - A (DCGS-A) to demonstrate JISR added value. Plan and execute additional formal assessment by Joint Interoperability Test Center (JITC), Joint C4ISR Battle Center and warfighter assessments by CENTCOM and I MEF.
- Loitering EW Killer: Continue systems integration and vehicle fabrication. Continue flight testing.
- Multiple Link Antenna System: Complete proof of concept demonstration. Refine and update CONOPS. Pursue follow-on Joint Warfighter Exercise opportunities and prepare for transition to acquisition. Prepare demonstration analyses and findings and deliver final reports to end the ACTD.
- Quick Bolt: Complete captive and live-fire flight testing.
- Restoration of Operations: Conduct final demonstrations and utility assessments. Enhance RestOps capabilities from the baseline systems and based on findings from preliminary demonstrations.

FY 2001 ACTDs:

- Active Network Intrusion Defense: Demonstrate and assess for military utility the detection, correlation, and notification capabilities of the agents; the collaborative interfaces; the automated capability to convene a distributed "virtual" cyber warfare organization of experts; and a rapid coordinated response capability. Demonstrate autonomic tracing on instrumentation of a portion of the Global Command and Control System (GCCS) global configuration with autonomic response and anomaly sensors. Exercise the virtual organization CONOPS.
- Adaptive Battlespace Awareness: Develop task-driven, automated, relevance-based information profiles for smart "push/pull" relevance-based dissemination in time-critical decision making. Demonstrate further enhancements in EUCOM area of responsibility. Perform final military utility assessment.
- Advanced Tactical Laser: Continue fabrication of laser package. Identify final air platform. Modify platform and laser package for integration. Continue to participate in military exercises and evolve operational employment concepts. Ground test laser package.

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- Advanced Technology Ordnance Surveillance: Produce 3,500 tags, with associated readers, for operational demonstrations and military utility assessments.
- Area Cruise Missile Defense: Conduct the JBECC – Rapid Deployment Demonstration (#3). Serves as the MUA venue. Demonstrate JBECC capability to deploy and provide an integrated air picture to a NORAD air defense sector anywhere within the CONUS.
- Coalition Combat Identification (CCID): Complete SBCI Coalition Combat Identification: improvements for U.S. and exportable radios. Complete FiST and TLDHS integration with SBCI and Tactical Internet. Finalize STANAG compliance efforts in US, Germany, UK and France using International Interoperability Testbed. Analyze JCIET 02 data to assess the current architecture. Assess the integration of SBCI into UK Bowman radio. Coordinate Allied CCID exercises. Execute Virtual / Simulation Operational Exercise with CCID technologies and Allies.
- Coalition Theater Logistics: Demonstrate the second objective (plan and execute supply and sustainment) during Team Challenge 03. Continue to refine first objective of CTL ACTD (plan and execute strategic deployment and redeployment). Continue Military Utility Assessment. Prepare for final Military Utility Assessment in FY 2004. Refine transition plans to GCSS.
- Hunter Standoff Killer Team: Complete software builds and simulation tests for MCA and WA. Complete hardware in the loop integration tests of the MCA A2C2S and the WA Longbow Apache systems. Integrate pre-production Joint Stand-Off Weapon (JSOW) data terminal, antenna, guidance and test system with the F/A-18 and the Longbow Apache. Initiate HSKT connectivity testing and preliminary user evaluation in relevant warfighter tactical environment.
- Joint Area Clearance: Conduct Joint and Service demonstrations.
- Network-Centric Collaborative Targeting: Conduct additional Phase I demonstration to integrate precision targeting capabilities using existing datalinks and current TTPs. Initiate Phase II by integrating Phase I demonstration residuals into NCCT Core Technology Prototype development. Continue to develop Participant Integration Modules (PIM) for airborne platforms and ground stations. Continue to integrate NCCT Communications Equipment into the NCCT Prototype design.
- Personnel Recovery Extraction Survivability Aided by Smart Sensors: Complete space hardware and miniature GPRS design, fabrication and testing. Conduct fabrication, build-up, integration and preliminary testing of HH-60G Pavehawk extraction survivability sensors and suite. Develop Phase II demonstration and MUA plan.
- Tactical Missile System - Penetrator: Complete and evaluate initial flight testing.
- Theater Integrated Planning System: Migrate nuclear and conventional planning tools to the Theater Planning Response Cells (TPRC) to support a deployable configuration. Begin work on crisis action and immediate planning capabilities.

FY2002 ACTDs:

- Active Denial System (ADS): Design a high-mobility, multi-purpose wheeled vehicle (HMMWV)-based configuration system.
- Advanced Notices: Classified content only.
- Agile Transportation (AT): Determine final structure of Mode Determination Broker (MDB), the first of the Scheduling Decision Support Tools to be implemented.
- Contamination Avoidance at Seaports of Debarkation (CASPOD): Conduct preliminary demonstrations. Incorporate initial results from FY02 baselining activities toward an upgraded CASPOD system.

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- Coalition Information Assurance Common Operational Picture (CIA COP): Conduct initial demonstrations with U.S. Space Command. Prepare for additional demonstrations with U.S. European Command and U.S. Joint Forces Command
- Expendable Unmanned Aerial Vehicle (XUAV): Upgrade ground control station for multi-configuration and multi-vehicle operation. Finalize vehicle/avionics design and produce residual units. Develop CONOPS and commence military utility assessment.
- Homeland Security Command and Control (HLS C2): Demonstrate key technologies that will assure the integrity of C2 and situational awareness, interagency CONOPS and a coordinated multi-crisis response.
- Hyperspectral Collection and Analysis System (HYCAS): Demonstrate the tactical hyperspectral sensor and a Global Hawk hyperspectral sensor.
- Joint Explosive Ordnance Disposal (JEOD): Develop and exercise reachback capability. Integrate robotics with digital x-ray capability. Perform initial; military utility assessment.
- LASER Language Translator (LASER): Conduct laboratory and CONUS testing of text-to-text and speech-to-speech translation projects. Define architecture and integration approach. Conduct project-level military utility assessments, including document exploitation. Transition at project level as appropriate.
- Micro Air Vehicle (MAV): Conclude Phase I field evaluations. Integrate feedback into fabrication of 25 Phase 2 diesel systems. Begin Phase II field evaluations.
- Pathfinder: Continue technology search to complement components technology for subsystem and system technology. Continue appropriate limited objective experiments. Based on results, begin transition of successful technology evaluations into system.
- Signals Intelligence (SIGINT) Processing: Classified content only.
- Space-Based Moving Target Indicator (SBMTI): Test signal processing and tasking software.
- Thermobarics (TB): Conduct full-scale validation tests. Downselect explosive fill material. Select warhead and integrate explosive. Produce test assets and conduct weapons systems qualification tests. Develop weapon effectiveness models for planning tool.

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(U) ACQUISITION STRATEGY: Not Applicable

(U) B. Program Change Summary	<u>FY2001</u>	<u>FY 2002</u>	<u>FY 2003</u>	<u>Total Cost</u>
President's FY 2001 Budget Submission	116.425	118.917	121.516	Continuing
Delta	2.319	30.000	30.600	
FY 02 Amended President's Budget Submission	118.744	148.917	152.116	
Appropriated Value	119.925	159.417		Continuing
Adjustments to Appropriated Value				
a. Congressionally Directed undistributed reduction	0.000	(1.655)	0.000	
b. Rescission/Below-threshold Reprogramming, Inflation Adjustment	(1.106)	0.000	0.000	
c. Other	0.000	0.000	47.464	Continuing
Current President's Budget	118.819	157.762	199.580	Continuing

Change Summary Explanation:

(U) Funding: **FY 2002** Amended budget provides additional resources to start 15 new ACTDs.
FY 2003 Funding increase provides additional resources to sustain the ongoing projects, start a minimum of 15 new ACTDs, increase OSD/AS&C overall participation in funding ACTDs, provides more "up-front" funding of the program to better match Service POM cycles, and begins to address transition funding challenges.

(U) Schedule: Not Applicable

(U) Technical: Not Applicable

(U) C. Other Program Funding Summary Cost : Not Applicable

(U) D. Schedule Profile: Not Applicable

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(U) A: Acquisition strategy: Not Applicable

(U) E. PE Funding for FY 1996 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY 2002</u>
Airbase/Port Biological Detection**	1.200	.700
Battlefield Awareness and Data Dissemination*	0	0
Combat Identification*	0	0
Combat Vehicle Survivability*	0	0
Counterproliferation I*	0	0
Counter Sniper*	0	0
Joint Logistics**	0	0
Joint Readiness Extension to Advanced Joint Planning *	0	0
Low Life Cycle Cost, Medium Lift Helicopter*	0	0
Miniature Air Launched Decoy*	3.600	0
Navigation Warfare*	0	0
Semi-Automated IMINT Processing*	0	0
Tactical UAV*	0	0
Theater High Energy Laser**	0	0

*Completed

** Completed the demonstration phase of the ACTD

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(U) E. PE Funding for FY 1997 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Chemical Add-On to Biological Detection*	0	0	0
Consequence Management*	0	0	0
Counterproliferation II	3.300	0	0
Extending the Littoral Battlespace** (Note 1)	6.000	15.607	17.500
Information Operations Planning Tool*	1.800	0	0
Integrated Collection Management**	1.300	0	0
Joint Advanced Health and Usage Monitoring System	2.700	1.700	0
Military Operations in Urban Terrain	6.200	0	0
Rapid Terrain Visualization*	5.400	0	0

* Completed

** Completed the demonstration phase of the ACTD.

Note 1: Includes the JTF Warnet project.

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(U) E. PE Funding for FY 1998 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Adaptive Course of Action**	1.700	0	0
C4I for Coalition Warfare	2.000	1.000	0
High Powered Microwave*	0	0	0
Information Assurance: AIDE**	1.700	1.300	0
Joint Bio Remote Early Warning System*	.200	0	0
Joint Continuous Strike Environment**	2.300	3.100	0
Joint Modular Lighter System*	.400	0	0
Line-of-Sight Anti-Tank (Note 1)	0	4.000	0
Link 16*	1.800	0	0
Migration Defense Intelligence Threat Data System	1.200	1.300	0
Precision Targeting Identification**	2.200	0	0
Space Based Space Surveillance Operations*	.800	0	0
Theater Precision Strike Operations**	4.800	0	0
Unattended Ground Sensors*	.900	0	0

*Completed

** Completed the demonstration phase of the ACTD

Note (1): In FY-01, LOSAT was funded using FY-00 resources.

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(U) E. PE Funding for FY 1999 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY 2002</u>	<u>FY 2003</u>
Battle Damage Assessment in the Joint Targeting Toolbox	0	.300	.4 00
Coherent Analytical Computing Environment	1.500	.300	0
Common Spectral MASINT Exploitation Capability**	1.200	.100	0
Compact Environment Anomaly Sensor	0	.100	0
Force Medical Protection	.100	.100	0
Human Intelligence and Counterintelligence Support Tools**	2.900	.500	.300
Joint Medical Operations Telemedicine	.800	1.300	0
Joint Theater Logistics	0	0	0
Personnel Recovery Mission Software *	.600	0	0
Small Unit Logistics *	0	0	0
Theater Air and Missile Defense Interoperability	4.800	1.900	.600

*Completed

** Completed the demonstration phase of the ACTD

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(U) E. PE Funding for FY 2000 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY2002</u>	<u>FY 2003</u>
CINC 21	9.969	10.600	4.280
Coalition Aerial Surveillance and Reconnaissance	1.900	2.600	2.000
Communication/Navigation Outage Forecasting System	1.900	1.500	1.000
Computerized Operational MASINT Weather	2.500	1.400	1.000
Content-Based Information Security	2.000	.300	0
Global Monitoring of ISR Space Systems	.600	.400	.400
Ground-To-Air Passive Surveillance	1.100	2.000	1.400
Joint Intelligence, Surveillance and Reconnaissance	5.800	2.700	0
Multiple Link Antenna System	.500	1.300	1.300
Quick Bolt	5.500	8.100	7.000
Restoration of Operations	2.400	3.600	2.100
Tri-Band Antenna Signal Combiner	.800	0	0

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(U) E. PE Funding for FY 2001 ACTDs

<u>ACTD</u>	<u>FY 2001</u>	<u>FY2002</u>	<u>FY 2003</u>
Active Network Intrusion Defense	1.300	2.000	2.100
Adaptive Battlespace Awareness	1.800	3.400	3.700
Advanced Tactical Laser (Note 1)	2.000	14.00	7.000
Advanced Technology Ordnance Surveillance	0	1.300	.900
Area Cruise Missile Defense	0	0	1.500
Coalition Combat Identification	0	0	6.300
Coalition Theater Logistics	1.500	2.700	2.800
Coastal Area Protection System*	1.350	0	0
Hunter Standoff Killer Team	0	0	9.600
Joint Area Clearance	2.000	3.100	1.400
Loitering Electronic Warfare Killer	1.000	6.700	1.400
Network-Centric Collaborative Targeting	3.000	6.700	7.000
Personnel Recovery Extraction Survivability Aided by Smart Sensors	1.000	3.400	4.200
Tactical Missile System Penetrator	4.300	7.700	8.400
Theater Integrated Planning Subsystem	1.200	.800	.800

Note (1): ATL FY-02 total includes a \$7M congressional plus-up.

*Completed

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(U) E. PE Funding for FY 2002 ACTDs

<u>ACTD</u>	<u>FY 2002</u>	<u>FY 2003</u>
Active Denial System	.450	1.800
Agile Transportation	2.720	3.800
Coalition Information Assurance Common Operational Picture	2.430	3.800
Contamination Avoidance at Seaports of Debarkation	1.800	2.500
Expendable Unmanned Aerial Vehicle	2.925	4.800
Homeland Security Command and Control	3.780	5.100
Hyperspectral Collection and Analysis	3.000	4.200
Joint Explosive Ordnance Disposal	1.800	5.100
Advance Notices	4.500	3.800
Language and Speech Exploitation Resources	2.700	5.100
Micro Air Vehicle	.900	4.400
Pathfinder	.900	3.800
Signals Intelligence Processing	.500	0
Space-Based Moving Target Indicator (MTI)	4.900	5.500
Thermobarics	1.350	3.200

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