RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)				DATE June 2001	
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3		**R-1 ITEM NOMENCLATURE** Advanced Concept Technology Demonstrations PE 0603750D8Z			
COST *(In Millions)*	FY2000	FY2001	FY2002	Cost to Complete	Total Cost
Total Program Element (PE) Cost	104.384	118.744	148.917	Continuing	Continuing
ACTDs/P523	104.384	118.744	148.917	Continuing	Continuing

(U) A. Mission Description and Budget Item Justification

(U) 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 risk vehicles for pursuing that objective. 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 involve a material development organization that develops the technology, 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 capabilities being evaluated. They allow the users an opportunity to assess the military utility of the proposed capability prior to a major acquisition decision. They also provide the Services with a mechanism for compressing acquisition cycle time, thus significantly improving their response to priority operational needs. As such, ACTDs are at the foundation of the DoD acquisition reform process. They do not substitute for formal DoD acquisition procedures, but do accelerate these procedures for technologies which are deemed by the applicable 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.

(U) The Military Departments and Defense Agencies provide most of the funding (80–90 percent) for ACTDs. This demonstrates significant Service/Agency commitment to the ACTD. Funding from this program element is used: 1) to support actual demonstrations and exercises, 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 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) Both the Science and Technology (S&T) and the warfighter communities submit candidate ACTDs in January of each year. The candidates proposed by the S&T community reflect technological opportunities enabled by recently demonstrated technology. The candidates proposed by the warfighter

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community (Joint Chiefs of Staff (JCS), Unified Commanders in Chief (CINCs) and Service 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, and that the capability addresses a priority military need.

(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) prioritizes 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.

(U) The typical timeline of two-to-four years for the operational demonstration phase of an ACTD is compressed compared to normal 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 current 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 used 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 assets already produced.

(U) The request for FY 2002 candidate ACTDs was issued October 2000. Proposals were received from the CINCs, Services, other DoD Agencies, and industry in January 2001. Candidates are organized into the *Joint Vision 2020* operational concepts of Dominant Maneuver, Precision Engagement, Full Dimensional Protection and Focused Logistics. Review of the candidates for FY 2002 ACTDs began in February 2001. As an initiative in FY 2002, the Department intends to begin a larger number of ACTDs, provide s higher percentage of OSD funding for these new ACTDs and provide additional funding for expanded user evaluations (EUEs) at the conclusion of successful ACTDs. This additional EUE funding will also facilitate enhanced program transition. Funding for new FY 2002 ACTDs is approximately $30 million.

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(U) PROGRAM ACCOMPLISHMENTS AND PLANS:

(U) **FY 2000 Accomplishments**: All ongoing ACTDs initiated in Fiscal Years 1995 through 2000 have been reviewed for objectives, content and management. This includes in-depth review by the ACTD operational sponsors, such as United States Joint Forces Command (JFCOM). Of the approximately 20% of all ACTDs deployed, or requested for deployment, to Operation Allied Force, some remained in theater as part of Kosovo peacekeeping operations. Twelve new ACTDs were started in FY 2000: CINC 21, Coalition Aerial Surveillance and Reconnaissance, Communications/Navigation Outage Forecast System, Computerized Operational MASINT Weather, Content-Based Information Security, Global Monitoring of Intelligence, Surveillance and Reconnaissance Space Systems, Ground-to-Air Passive Surveillance, Joint Intelligence, Surveillance and Reconnaissance, Multiple Link Antenna System, Quick Bolt, Restoration of Operations and Tri-Band Antenna Signal Combiner. The data call for FY 2001 ACTDs began in October 1999. Twenty-five final ACTD candidates, of the fifty 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 logistics, intelligence, reconnaissance, surveillance, life support, information technology, automated maintenance, ordinance upgrade, communications and force identification. These candidates were evaluated for technical maturity by the Breakfast Club and assessed for operational need and utility by the Joint Staff Joint Warfare Capability Assessment (JWCA) process. The JROC then prioritized these 25 candidates and fifteen were finally selected based upon funding availability. FY 2000 funds were transferred to the executing services/agencies in the amount of $104.384 million.

(U) FY 2000 accomplishments include:

FY 1995 Starts:

- High Altitude Endurance Unmanned Aerial Vehicle (HAE UAV): Completed the operational demonstrations and military utility assessment. Concluded the interim capability period to end the ACTD.
- Joint Countermine (JCM): Completed the integration of the Joint Countermine Application (JCA) to run under all current service command, control, communications and intelligence architectures. Concluded the interim capability support period to end the ACTD.
- Precision SIGINT Targeting System (PSTS): Continued the interim capability support period.
- Rapid Force Projection Initiative (RFPI): Concluded the interim capability support period to end the ACTD.

FY 1996 Starts:

- Air Base/Port Biological Detection: Continued interim capability and residual maintenance of detector networks. P rovided depot repairs and spares. Initiated upgrade of sampling system and maintained ongoing operator training at four sites in two theaters.
- Battlefield Awareness and Data Dissemination (BADD): Fielded BADD products to selected CINCs. Continued upgrading capability, based on warfighter input/feedback, to provide a more enhanced version to the CINC's in the latter part of the fiscal year. Concluded interim capability period and ended the ACTD. Transitioned capability to the Defense Information Services Agency (DISA) for operations and maintenance support.

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- Combat Identification (CID): Supported interim capability assets for the final year of continued operation and obtained additional user feedback on military utility and maintainability. Continued operational support provided a mechanism from which critical features for continued development of "combat identification" technologies emerged. Concluded interim capability period to end the ACTD.
- Counterproliferation I (CP I): Supported residuals for further operational feedback to assist system engineering, integration and production activities. Continued to support exercises and concept of operations (CONOPS) development for U.S. European Command (USEUCOM), incorporating experience gained by deployment of CP residuals for Kosovo. Completed interim capability period to end the ACTD.
- Joint Logistics: Joint Decision Support Tools (JDSTs) were hardened and evaluated in a February 2000 military utility demonstration. Four of the five JDSTs were recommended for transition to Global Communications Support System (GCSS) from a user perspective. All products were segmented for transition to DISA GCSS and have been maintained as an interim capability. DISA D6 has accepted the products for transition and integration.
- Miniature Air Launched Decoy (MALD): Continued the interim capability period, enhanced design for reliability and completed the military utility assessment.
- Navigation Warfare: Continued interim capability period. Residual equipment was utilized in support of the Joint Global Positioning System Combat Effectiveness (JGPSCE) joint test and evaluation.
- Semi-Automated IMINT Processing (SAIP): Supported the Army vehicle version and the Air Force rack version of the SAIP residuals. SAIP was used in the U.S. Central Command (USCENTCOM) Joint Intelligence Center (JIC) and was deployed to theater. Revised the CONOPS and finalized transition plans. Concluded the interim capability period and ended the ACTD.
- Theater High Energy Laser (THEL): Laser system constructed at White Sands Missile Range early in the fiscal year, followed by system integration and functional testing. Various sub-systems tests conducted during December 1999 - May 2000. In June 2000, fully integrated laser system successfully shot down a Katyusha rocket and, in August 2000, successfully engaged a multiple-rocket salvo.

FY 1997 Starts

- Chemical Add-On to Air Base/Port Bio Detection: Concluded interim capability and residual maintenance, training and field support at four sites in two theaters. Ended the ACTD.
- Counterproliferation II (CP II): Completed a series of successful operational tests and the PDR on the nose assembly of the Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) Bomb Impact Assessment (BIA) Modification. Continued engineering and manufacturing development (EMD) work on the Navy's aircraft-launched BLU-116 Advanced Unitary Penetrator (AUP) and the multi-Service FMU-159 Hard Target Smart Fuze (HTSF) for optimizing detonation location in multi-layered hardened targets. Continued development and integration of the Tactical Tomahawk Penetrator Variant (TTPV) penetrating standoff cruise missile. Continued work on Enhanced Payloads for targeting biological agents. Continued preparations for FY01 operational demonstrations.
- Extending the Littoral Battlespace (ELB): Refined Major System Demonstration I (MSD I) architecture and technology enhancements. Participated in two limited objective experiments (LOEs) with operating forces in preparation for MSD II in FY 2001.
- Information Operations Planning Tools (IOPT): Completed interface to Mission Integration Database (MIDB) 2.0 and enhanced Dynamic Integrated Air

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Defense System (IADS) model. User evaluation and training continued during JEFX 00. Provided sustainment and support of IOPT to CENTCOM, Central Air Forces (CENTAF) and a number of other locations.

- Integrated Collection Management (ICM): Developed operations and intelligence, surveillance and reconnaissance synchronization matrix and automated interfaces to collection platforms and data sources. Improved reengineered integration collection management processes. Connected collection management nodes for collaboration. Continued transition planning and conducted a field testing and military utility assessment as part of the Special Project-99 exercise run by U.S. Southern Command (USSOUTHCOM) and the Joint Expeditionary Force Exercise sponsored by the U.S. Air Force.
- Joint Advanced Helicopter Usage and Monitoring System (JAHUMS): Installed baseline system and sensors on H-60 flight test aircraft and conducted developmental testing. Technology module critical design reviews conducted. Began hardware/software builds in preparation for bench testing. Developed health and usage monitoring system cost/benefit model and began data collection.
- Military Operations in Urban Terrain (MOUT): Completed systems integration assessments and refinements. Acquired products and prototypes for the culminating demonstration (CD) and for interim operational capability. Completed New Equipment Training (NET) for the CD. Conducted Situation Awareness/Communications Excursion. Conducted Advanced Concept Excursion. Conducted the MOUT Culminating Demonstration. Completed several operational/training (e.g., tactics, techniques and procedures (TTP) handbooks) and programmatic transitions.
- Rapid Terrain Visualization (RTV): Acquired high-resolution digital elevation data and satellite imagery in support of Warfighter Exercises. Exploited multi-spectral and radar imagery to accelerate terrain feature extraction. Upgraded workstations and software at Army XVIII & III Corps. Completed installation of Light Detection and Ranging (LIDAR) & Infrared Synthetic Aperture Radar (IFSAR). Demonstrated capabilities for rapid data generation. Completed transition memorandum of understanding (MOU) with Combat Terrain Information Systems.

FY 1998 Starts:

- Adaptive Course of Action (ACOA): Installed baseline system and sensors on H-60 flight-test aircraft and conducted developmental testing. Technology module critical design reviews conducted. Began hardware/software builds in preparation for bench testing. Developed health and usage monitoring system cost/benefit model and began data collection.
- C4I for Coalition Warfare (C4ICW): Mission Control System Block III software and hardware was successfully used in a coalition command post exercise that demonstrated interoperability between Command and Control Systems/prototypes from Canada, Germany, Italy, the Netherlands and Spain using an agreed data model and data replication mechanism.
- Information Assurance: Automated Intrusion Detection Environment (IA:AIDE): Selection of additional sites were conducted based on a representative model of the Defense Information Infrastructure (DII). Surveys for the new sites were conducted and new sensors were identified which will be integrated into the AIDE environment. Sensor data and data correlation were fine tuned to reduce false alarm rates. Hardware and software upgrades for all the ACTD sites were purchased and installed. All additional installations and training were completed. Initiated final reports documenting the ACTD. A final demonstration of the system was conducted.
- Joint Biological Remote Early Warning System (JBREWS): Continued field tests of ACTD components at Dugway Proving Grounds. Commenced initial provision of residual assets (Sentry, Sample Identification, and Sensor Network Command Post Units) to USEUCOM. Continued CONOPS development

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and training.

- Joint Continuous Strike Environment (JCSE): Conducted military utility assessment in Fleet Battle Experiment Foxtrot and simulation-driven lab test. Completed third of four functional software builds. Continued concept of operations refinement and transition planning. JCSE was also used in JFCOM J-9 attack operation experiments.
- Joint Modular Lighter System (JMLS): Completed fabrication of powered and non-powered eight foot-wide modules and ancillary hardware and delivered hardware to Naval Amphibious Base Little Creek. Contractor conducted test and demonstration (T&D) program including sea trials of powered subsystems. T&D program included technical testing of JMLS hardware, supported by Government furnished equipment. Technical testing addressed system performance and interface issues. Following completion of the contract, the government corrected reliability and safety discrepancies identified during T&D. Government conducted test and evaluation (T&E) program to obtain Army safety releases prior to military personnel operating the craft in Sea State 3 (SS3) and to support a military utility assessment scheduled for 2ndQ FY01. Safety releases were obtained for several subsystem capabilities. However, the Army and Navy decided to pursue fielding a wider 24-foot module instead of the current eight foot-wide module. Commenced interim capability support period.
- Line-of-Sight Anti-Tank (LOSAT): Continued fire unit and missile detail-level design and analysis. Hardware tooling design and fabrication begun. Initiated fire unit and missile piece part hardware fabrication to support launch effects tests. Completed fire unit operational and test software design. Initiated code development and test. Completed update of missile operational software requirements and initiated software update. Completed hardware-in-the-loop and closed-loop simulation software upgrades.
- Link-16: Continued operational support to the Combine Air Operations Center (CAOC) in Kosovo. Continued development of DoD Joint Data Network (JDN) multi-tactical digital information link (TADIL) (Link 11 and Link 16) translation and data forward efforts. Successfully completed Joint Variable Message Format (JVMF)/Link 16 Joint Service Certification. Successfully transitioned Rosetta technology to USAF Tactical Air Control Party (TACP) Acquisition program. Continued integration efforts with Precision Targeting Identification ACTD.
- Migration Defense Intelligence Threat Data System (MDITDS): Infrastructure Enhancements included integration of Generic Message Browser, Crisis Case, Counterintelligence Applications, and Global Query. The Tactical Server hardware was deployed to theater, and the requirement definition for reengineering was completed.
- Precision Targeting Identification (PTI): Deployed the production Advanced Target Detection system in the fleet. Transitioned the re-configurable optical station (part of the C-130 OSSCAR Roll-on/Roll-off (RO/RO)) into an acquisition program for Naval Intelligence. Initiated prototype C-130 OSSCAR RO/RO C4ISR deployment system design. Integration design of the Rosetta Communication Gateway with the PTI track correlation processor was completed. Completed design and fabrication of the PTI telescope system. Completed Laser Radar (LADAR) Level II design package for the Tornado fighter aircraft. Completed lab evaluation of the PTI LADAR system. Initiated multi-year cooperative program with Ministry of Defense, United Kingdom on integration test and evaluation of the fighter-based LADAR for target identification.
- Space Based Space Surveillance Operations (SBSSO): Concluded formal demonstration and completed transition plan for contributing sensor operations for the Space Surveillance Network (SSN) to Air Force Space Command. The SBSSO has discovered or recovered over 100 lost, maneuvered, new or previously uncatalogued objects. Current capability totals over 1,000 observations per day, and can search the geosynchronous belt portion of deep space

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in three and one half hours of observations taken over a twenty-four hour period.

- Theater Precision Strike Operations (TPSO): Conducted the unreinforced scenario assessment, the second of three user demonstrations in conjunction with the U.S. Forces Korea Ulchi Focus Lens Exercise.
- Unattended Ground Sensors (UGS): Commenced interim capability period. Initiated transition to acquisition program. Refurbished sensors for use in exercises and operations. Performed additional communications development.

FY 1999 Starts:

- Battle Damage Assessment (BDA) in Joint Targeting Toolbox (BDA in JTT): Developed requirements and the operational concept. Conducted a demonstration at USCENTCOM of prototype software screen designs, including some interactive capability.
- Coherent Analytical Computing Environment (CACE): Decreased information latency of aircraft maintenance reports through implementation of a data warehouse with live feeds of maintenance data and a user-familiar interface. Completed extended collection of aircraft flight data sets, and prototyped tools for aircraft performance analysis and for cross-correlation of flight parameters with aircraft maintenance records. Demonstrated agent-based flight scheduling software for real-time re-planning and forecasting.
- Common Spectral MASINT Exploitation Capability (COSMEC): Demonstrated the utility of spectral data with operational assets. COSMEC ground station was implemented in USEUCOM, as well as the support of tactical airborne sensors. Released software version 1.3.2. Implemented system at USSOUTHCOM and conducted a demonstration at USEUCOM.
- Compact Environment Anomaly Sensor II (CEASE II): Completed system integration on critical satellite systems and conducted system launch.
- Force Medical Protection/ Dosimeter (FMP/D): Conducted technical evaluation of Phase II sampler. Conducted utility assessment at the CINC level.
- Human Intelligence (HUMINT) and Counterintelligence (CI) Support Tools (HICIST): Conducted military utility assessments in three exercises to evaluate technologies for special operations forces, human intelligence, and counterintelligence applications. HUMINT Analytic Support Cell achieved interim operational capability and text translation technology was provided to Bosnia.
- Joint Medical Operations - Telemedicine (JMO-T): Telemedicine (JMO-T): Assessed options for standard tactics, techniques, and procedures for JMO-T employment forward of the theater hospital. Demonstrated JMO-T capabilities to provide medical information in a net-centric environment across a wide variety of communication modes; assessed the utility of JMO-T technologies in improving the timeliness, quality and applicability of information in medical decision making; initiated preparations for leave behind/residual period.
- Joint Theater Logistics (JTL): Preliminary development focused on collaboration, visualization, and logistics user management processes. User requirements were developed and refined, with a complimentary program design. Commenced a business process review to model the use of JTL capabilities in the warfighter environment. Worked the incorporation of collaboration products from Adaptive Courses of Action ACTD.
- Personnel Recovery Mission Software (PRMS): Conducted system integration and fielding. Participated in the PACOM Northern Edge exercise. Completed development of three prototypes for assessment by user community. Continued software refinements based on user requirements. Conducted CENTCOM integration.
- Small Unit Logistics (SUL): Deployed the web-based system in the Combined Arms Exercise (CAX) and Marine Expeditionary Force Exercise (MEFEX)

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showing interoperability with legacy command and control (C2) personal computer systems and demonstrated decision support tools for supportability of missions. Assessed performance of tactical-level C2 with a web-enabled battlefield, including technical characterization of bandwidth measurements, as well as operational performance measures against the Joint Universal Task List.

- Theater Air and Missile Defense Interoperability (TAMDI): Demonstrated the ability to pass target track information to a PATRIOT weapons system to initiate an intercept (launch weapon) in advance of the PATRIOT radar detecting and tracking the target.

FY 2000 Starts:

- CINC 21: Implemented cooperative knowledge wall and data interoperability effort between U.S. Strategic Command (USSTRATCOM) and U.S. Pacific Command (USPACOM). Demonstrated high resolution multiframe presentations of logistics situation and battle rhythm. Assessed critical decision points, processes and information requirements. Supported assessment of collaboration tools over secure networks. Initiated joint coalition efforts with UK, Canada and Australia on interoperable knowledge sharing.
- Coalition Aerial Surveillance and Reconnaissance (CAESAR): Participated in the Clean Hunter/Joint Project Optic Windmill exercise at five locations in theater. CAESAR assets were employed in both simulated (Joint STARs, Global Hawk, UK ASTOR, and Italian CRESO) and live (French Horizon, P3 APY-6) exercises. Exercise provided baseline for CAESAR technology and CONOPS. Negotiated seven-country memorandum of understanding.
- Communication/Navigation Outage Forecasting System (C/NOFS): Confirmed launch opportunities for space-based package. Began fabrication process of space-based sensor.
- Computerized Operational MASINT Weather (COMWx): Developed and validated algorithms for providing near-real-time cloud/aerosol products for high-value targeting support utilizing existing National assets. Planned a foundation to exploit future systems and increase battlespace situation awareness to support use of precision guided munitions, strike warfare, fleet defense, air refueling and reconnaissance. Investigated future sensor requirements.
- Content-Based Information Security (CBIS): Awarded contract for Phase I (Data-in-Transit) development of the security card; the core element of CBIS technology providing embedded encryption for the workstation. Demonstrated the CBIS concept of coalition interoperability during the Millennium Challenge exercise.
- Ground-to-Air Passive Surveillance (GAPS): Conducted Caribbean assessment for availability of illumination and CONOPS analysis. Completed and validated simulation and modeling tools for use in other theater scenarios. An integrated process team (IPT), including the users, defined and modeled operational scenarios using a suite of tools available from industry. Models and simulation were used to ensure that the operational concepts and the resulting system specifications were understood prior to system integration.
- Global Monitoring of ISR Space Systems (GMSIS): Initiated the ACTD.
- Joint Intelligence, Surveillance and Reconnaissance (JISR): Defined initial user requirements and operational functionality. Designed system architecture and virtual demonstrations. Identified and evaluated candidate technologies and software. Built initial modeling and simulation capability.
- Multiple Link Antenna System (MLAS): Completed initial radio frequency (RF) component design and fabrication. Conducted component lab tests and confirmed
component capability to simultaneously maintain four full-duplex high data rate links. Confirmed component compatibility with common data link (CDL)

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format and capability to transmit and receive all CDL data rates within the frequency management parameters. Initiated systems engineering efforts leading to antenna configuration demonstrations and field tests.

- Quick Bolt: Established Integrated Product Teams. Prepared a functional requirements document (FRD) which will become the basis for an operational requirements document. Awarded a contract to review the FRD and begin system design work.
- Restoration of Operations (RestOps): Completed development of site baseline exercise scenario. Conducted Joint Chemical Field Trials and CONOPS development and validation. Developed methodologies to assess technology, chemical field trials, and operational capability for use during RestOps and other fixed-site programs.
- Tri-Band Antenna Signal Combiner (TASC): Integrated tri-band antenna signal combiner from existing hardware and designs. Began development of associated mission planning software to maximize data throughput, while minimizing antenna weight and volume.

(U) **FY 2001 Plans:** Transition those ACTDs that have successfully demonstrated military utility and been determined to warrant acquisition. Continue development and operational demonstration of the remaining FY 1996-2000 ACTDs, and start new FY 2001 ACTDs in accordance with planned schedules. Continue the annual process of developing and structuring new candidate ACTDs to rapidly address user needs and address issues identified in *Joint Vision 2020*. Several ACTDs will remain deployed in the Kosovo theater as part of ongoing peacekeeping operations. Funding will continue for all ongoing ACTDs, including the new FY 2001 ACTDs, for a total of $118.744 million.

(U) Other significant plans for FY 2001 are:

FY 1995 Starts:

- Precision SIGINT Targeting System: Conclude the interim capability support period and end the ACTD.

FY 1996 Starts:

- Airbase/Port Biological Detection System: Continue residual maintenance of detector networks, provide depot repairs and spares, initiate upgrade of sampling system and maintain ongoing operator training at four sites in two theaters. Provide data and findings for EMD of ACTD elements. Continue the interim capability period.
- Joint Logistics: Transition product to GCSS through the Advanced Information Technology Services (AITS) Joint Program Office (JPO) within the Defense Information Systems Agency (DISA). Conclude interim capability period and end the ACTD.
- Miniature Air-Launched Decoy: Conclude the interim capability period and end the ACTD.
- Navigation Warfare: Conclude the interim capability period and end the ACTD.
- Theater High Energy Laser: Commence the interim capability support period.

FY 1997 Starts

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- Counterproliferation II: Complete the BIA system critical design review (CDR) and final RDT&E, including demonstrating key performance parameters necessary to qualify for production. Complete final RDT&E sled testing necessary to qualify the BLU-116 Advanced Unitary Penetrator (AUP) for production. Complete Hard Target Smart Fuse (HTSF) EMD. Continue RDT&E of Tactical Tomahawk Penetrator Variant (TTPV). Conduct sled tests to demonstrate penetration capability and demonstrate effectiveness of a statically-emplaced TTPV warhead against hardened, cut-and-cover facility. Execute Joint Air-to-Surface Standoff Missile (JASSM) developmental test against above-ground simulated biological weapons facility and obtain collateral effects data. Continue RDT&E on enhanced payloads.
- Extending the Littoral Battlespace: Conduct MSD II, followed by the military utility assessment. De-install partial ELB configuration from the amphibious reconnaissance group (ARG). Continue residual planning and transition planning efforts with Navy/USMC acquisition programs.
- Information Operations Planning Tool: Continue residual support and finalize transition plans. IOPT supported CENTCOM and CENTAF in INTERNAL LOOK 2001. Provide IOPT capability to other IO-related programs in various services. Conclude the interim capability period and end the ACTD.
- Integrated Collection Management: Develop additional interfaces to collection platforms, collection nodes and data sources. Further enhance and refine software. Develop systems integration and enhancements to processes in response to user feedback. Conduct military utility assessment demonstrations, deliver residual interim capability to JFCOM and begin transition of technology for acquisition.
- Joint Advanced Health and Usage Monitoring System: Conduct bench-level integration testing of technology modules. Install technology modules on JAHUMS flight test aircraft. Provide aircrew training and install system at operational squadron. Begin the operational demonstration.
- Military Operations in Urban Terrain: Refurbish CD equipment and commence interim capability/extended user evaluation (EUE) period. Provide user evaluation information to appropriate combat and materiel development communities. Extend experimentation phase, focusing on partially met requirements, and undertake other key MOUT activities.
- Rapid Terrain Visualization: Complete integration and testing of high-resolution elevation data collection sensors. Complete final version of rapid terrain, data-generation software (Build 5.0). Acquire and process data over CONUS sites and the Republic of Korea. Install Build 5.0 software at XVIII and III Corps. Extend capabilities to units in Germany and Hawaii, and NIMA. Complete transition plan for operation of RTV sensors / aircraft. Initiate effort to transition sensors to UAV platform. End the ACTD.

FY 1998 Starts:

- Adaptive Course of Action: Continue multiple CINC, coalition and interagency-level software integration. Demonstrate military utility of the complete ACOA system during a joint exercise in the December 2000 time frame. Complete integration, hardening and transition into GCCS with delivery of the final version of ACOA. Delivered system will include improved versions of Web Planner, Odyssey, the Campaign Object server, Geospatial Force Planning Tool, Virtual Books, Intelligent Process Management, and Facilitate.com. Begin interim capability support phase.
- C4I for Coalition Warfare: Conduct a major demonstration, involving the United States (Maneuver Control System Block IV), United Kingdom, France, Germany, Italy and Canada, of the coalition interoperability gained with ACTD message formatting and database replication. This will be in the form of a field exercise. The developed capability will be fully integrated into the Maneuver Control System (MCS) for initial fielding during FYs 2001/2002. A decision will be made on the wider integration of capability into other Army Battle Command System (ABCS) components.

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- Information Assurance: Automated Intrusion Detection Environment: Upgrades for new versions of existing sensors and all software licensing and hardware maintenance will be installed and maintained. Additional correlation, visualization, and data mining tools will be enhanced and matured. CONOPS will be validated for the Initial Operational Capability. Transition planning will begin.
- Joint Biological Remote Early Warning System: Provide remote detection and warning of biological agents for a brigade-size assembly area to be installed and supported in theater. Conclude the interim capability support period to end the ACTD.
- Joint Continuous Strike Environment: Conduct Military Utility Assessments in Fleet Battle Experiment India and Korean exercises. Complete software build four and begin DII-COE compliance testing. Conduct simulation driven stress and interface test.
- Joint Modular Lighter System: Conclude interim capability support period to end the ACTD.
- Line-of-Sight Anti-Tank: Complete 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. Complete design changes to fire unit and missile assembly designs as a result of the operational requirements document (ORD) and prepare for final program design review. Complete tool design and fabrication. Update software requirement analyses and begin detail design updates to incorporate software modifications to reflect ORD updated requirements.
- Link-16: Continue operational support to the Combine Air Operations Center (CAOC) in Kosovo. Complete development of DoD Joint Data Network (JDN) multi-TADIL (Link 11 and Link 16) translation and data forward efforts. Plan to conduct a Joint Service Certification of the Rosetta multi-TADIL (Link 11/Link 16) functionality in third quarter Fiscal Year. Plan to conduct 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 in fourth quarter Fiscal Year 2001. Plan to complete integration efforts with Precision Targeting ID ACTD, and conduct a demonstration in fourth quarter Fiscal Year 2001. Plan commencement of Rosetta technology into the Loitering Electronic Warfare Killer (LEWK) ACTD as the communications node for the tactical UAV payload.
- Migration Defense Intelligence Threat Data System: Complete interface of MDITDS and Joint Risk Assessment Management Program (JRAMP) and evaluate it and the deployable server. Conduct a Beta II/ Force Protection Demonstration in conjunction with a field training exercise.
- Precision Target Identification: Conduct laboratory aircraft test and operational deployment of the complete PTI system. Conduct flight evaluation of the PTI LADAR system. Complete multi-year cooperation agreement with Ministry of Defense, UK for fighter-based LADAR. Complete prototype system design for the re-configurable optical station. End the ACTD.
- Space Based Space Surveillance Operations (SBSSO): Conclude interim capability period and end the ACTD. Initiate post-SBSSO ACTD dedicated sensor operations to Air Force Space Command. Transfer the space asset (MSX) from the Ballistic Missile Defense Organization (BMDO) to U.S. Space Command (USSPACECOM).
- Theater Precision Strike Operations (TPSO): Conduct the Transition-to-Reinforcement assessment, the third in series of user demonstrations/evaluations.
- Unattended Ground Sensor (UGS): Complete transition to acquisition. Conclude interim capability period and end the ACTD.

FY 1999 Starts:

- Battle Damage Assessment in Joint Targeting Toolbox: Develop software architectural “backbone” with limited ground force models/algorithms.

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Integrate BDA software into JTT version 3. Conduct initial USCENTCOM functional review and capability demonstration.

- Coherent Analytical Computing Environment: Provide flight operations planning and automated maintenance reporting tools to USMC aviation community for extended evaluation. Prototype a maintenance planning tool for preliminary assessment, and develop and demonstrate mission sensitive aircraft resumes as an integrated view into short-range and long-range maintenance and flight operations planning. Prototype and demonstrate an immersive user interface for CACE products that adjusts to the capabilities and requirements of the user. Develop Joint Strike Fighter Program Office impact assessment.
- Common Spectral MASINT Exploitation: Demonstrate the utility of spectral data with operational assets. COSMEC ground station will be implemented in EUCOM, as well as the support of tactical airborne sensors. Integrate the COSMEC system into the digital common ground station (DCGS) architecture and develop a COSMEC V2.0 for support of National Air Intelligence Center (NAIC) and operational users.
- Compact Environmental Anomaly Sensor II: Demonstrate mission support. Perform system on-orbit calibration and user support. Develop operational concepts for distributing environmental data.
- Force Medical Protection/ Dosimeter: Demonstrate real-time chemical sampler with biological agent collection capabilities. Conduct Phase I field evaluations. Complete field evaluation of Phase II sampler. Conduct technology lab testing. Transition system to the CINC level.
- Human Intelligence and Counterintelligence Support Tools: Assess CONOPS, equipment and architecture in Joint Warfighting exercises. Conduct OCONUS real-world military utility assessment and operational evaluation.
- Joint Medical Operations – Telemedicine: Complete capstone demonstration of integrated JMO-T capabilities. Complete the initial military utility assessment. Demonstrate integrated modeling and simulation capabilities for deploying medical forces. Prepare designated units to accept leave behind capability tactics and capabilities.
- Joint Theater Logistics: Expand capability to integrate in-theater distribution support planning and infrastructure assessment and compare alternative courses of action. Create temporal task identification and support force assignment. Forecast and assess the impact of deviations and alternative support concepts upon future operations.
- Personnel Recovery Mission Software: Complete integration and conduct operational assessment at CENTCOM's Internal Look 01 exercise. Complete lessons learned revisions from Internal Look 01 and begin delivery of user leave-behinds. Initiate transition activity.
- Small Unit Logistics: Final demonstration during Desert Knight. Receive interim authority to operate until fielding in the FY02 Program Objective Memorandum with a milestone decision from the USMC. Conclude the interim capability period and end the ACTD.
- Theater Air and Missile Defense Interoperability: Conduct user assessment of the AEGIS/PATRIOT integrated air picture capability through a real-time engage-on-remote demonstration. Collect Theater High Altitude Area Defense (THAAD)/Cooperative Engagement Capability (CEC) integration data and prepare integration approach and concept. Initiate single, integrated air-picture evaluation by integrating existing sensor systems in Korean theater of operations.

FY 2000 Starts:

- Coalition Aerial Surveillance and Reconnaissance: Participate in a live-fly exercise in Europe and evaluate the interchange format, registration algorithms,

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and moving target indicator (MTI) association, correlation and tracking algorithms. Continue development and integration of MTI-Synthetic Aperture Radar (SAR) cueing algorithms, the MTI-SAR common operational picture (COP), and mission planning and tasking tools.

- CINC 21: Demonstrate in Kernel Blitz exercise support for the PACOM Joint Mission Force concept by implementing CINC-to-Joint Task Force and component dynamically-shared plans and situation awareness. Continue joint coalition development of interoperable knowledge sharing.
- Communication/Navigation Outage Forecasting System: Initiate on-orbit sensor fabrication.
- Computerized Operational MASINT Weather: Demonstrate and continue to validate algorithms to exploit Computerized Operational MASINT Weather products at theater level. Improve infrastructure for dissemination of data to theater. Begin development of CONOPS for use of products in theater. Continue development of future sensor requirements.
- Content-Based Information Security: Complete development and test of the Phase I module of the Security Card. Initiate development of the cryptographic Key Management product with National Security Agency (NSA). Initiate development of the Phase II (data-at-rest) module of the CBIS security card. Form a CONOPS working group. Initiate coalition interoperability with Canadian Forces.
- Global Monitoring of Space ISR Systems: Establish architecture for data acquisition and processing and begin planning for the demonstration phases. Collect sample data for capability development.
- Ground-To-Air Passive Surveillance: Complete demonstration system specifications and amend/downsize the prototype to provide a two-dimensional (2-D) tracking system that is compatible with counter drug testing and assessment. Conduct testing on controlled ranges to evaluate passive detection and 2-D target tracking from a mobile platform on Chesapeake Bay. The testing phase will include planning, modeling and simulation, mission specific hardware modifications, installation, assessment and training. 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: Establish baseline capability with virtual/man-in-the-loop demonstrations. Integrate software on prototype hardware and participate in initial field demonstrations. Continue to demonstrate capabilities at both ARCENT's Lucky Sentinel Exercise and 1 Marine Expeditionary Force (1 MEF) Exercise (MEFEX).
- Multiple Link Antenna System: Complete design refinements for RF component elements. Fabricate and conduct lab tests and early interim assessments of improved elements. Complete design and initiate fabrication of interim and final demonstration antenna systems . Initiate design of antenna control system software and system integration. Continue systems engineering efforts leading to antenna configuration demonstrations and field tests.
- Quick Bolt: Continue design reviews, system integration and system testing of the components of the front-end guidance mechanisms.
- Restoration of Operations: Complete Joint Chemical Field Trials and technology assessments. Develop and conduct the baselining exercise. Refine methodology for operational capability assessment and plan for technology transition.
- Tri-Band Antenna Signal Combiner: Complete fabrication of antenna signal combiner. Begin military utility assessment and field trials. Prepare for transition to acquisition.

FY 2001 Starts:

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- Active Network Intrusion Defense (ANID): Develop technical reference model. Model candidate agent frameworks and collaborative interfaces and select appropriate technologies. Collect and correlate user requirements. Develop software requirements specification. Determine initial interfaces to exterior data sources such as sensors and firewalls. Install a prototype system on the Defense Information Systems Network-Leading Edge Services (DISN-LES). Provide demonstration of the agent framework component and correlation of data. Demonstrate the dynamic constitution of a virtual organization.
- Adaptive Battlespace Awareness: Demonstrate, in the EUCOM area of responsibility (AOR), the enhancement of the COP track data structures to allow tracks to be "tagged" with amplifying information such as targeting status and other relevance indicators for specific situations, events or tasks.
- Advanced Tactical Laser (ATL): Design laser assembly, fuel system, and optics to fit in a roll-on/roll-off package for the CV-22 aircraft. Validate current laser performance and stability.
- Advanced Technology Ordnance Surveillance (ATOS): Develop concept of operations, finalize system requirements, and evaluate 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.
- Coalition Combat Identification (CCID): Initiate Single Channel Ground and Airborne Radio System (SINCGARS)-based combat identification (SBCI) radio software upgrades. Initiate integration of improved SBCI waveform into Fire Support Team (FiST) system. Evaluate potential implementation of SBCI into allied digital radios including the UK Bowman radio. Coordinate Allied (France, UK, Germany) participation in the ACTD. Initiate development of STANAG 4579 compliant waveform. Define dismounted soldier efforts with Allies.
- Coalition Theater Logistics (CTL): Commence ACTD development efforts. Establish program development organizations and working groups. Develop the ACTD management plan and define technical and operational requirements. Conduct business process review to model coalition theater logistics concepts. Begin CTL CONOPS development. Conduct concept demonstration using Joint Logistics ACTD tools and demonstrate Australian Logistics Encyclopedia.
- Coastal Area Protection System (CAPS): Demonstrate the feasibility of deploying technologies in the coastal/littoral areas for force protection. The system demonstrations will consist of technologies to support the surveillance , identification and exclusion of threats in the vicinity of ports and harbors. The goal is to provide a rapid capability to the U.S. Navy, U.S. Marine Corps, and U.S. Army prepositioning ships, as well as a fly-away capability for contingency operations. End the ACTD.
- Hunter Standoff Killer Team (HSKT)**:** Integrate cognitive decision aiding technologies into the Army Airborne Command and Control System (A2C2S) to develop Mobile Commander's Associate (MCA) capability and the Longbow Apache helicopter to develop Warfighter's Associate (WA) capability. Integrate manned and unmanned teaming algorithms and software into the MCA and WA systems. Develop Link 16 data terminal for the Joint Standoff Weapon (JSOW) to provide enroute targeting updates for weapons delivery. Conduct preliminary design of sensor package for integration into unmanned aerial vehicle.
- Joint Area Clearance (JAC): Commence demonstration phase. The first half of FY 2001 will focus on obtaining and preparing area clearance technologies. The second half of FY01 will develop a training strategy that will feed several small-scale demonstrations at the Joint Readiness Training Center (JRTC). A CONOPS working group will be established by the Operational Manager (USJFCOM) to plan and coordinate demonstrations.
- Loitering Electronic Warfare Killer (LEWK): Produce and approve the Management Plan. Establish Integrated Product Teams. Begin preparation of the

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Functional Requirements Document (FRD), which will become the basis for an Operational Requirements Document. Award contract to finalize sub-systems and systems design, and begin integration and testing.

- Network Centric Collaborative Targeting (NCCT): Initiate improvement of front-end processing of AWACS, Guardrail, Rivet Joint, Compass Call, JSTARS, U-2, Nimrod and ASTOR products to decrease time and spatial error for time critical targeting.
- Personnel Recovery Extraction Survivability Aided by Smart Sensors (PRESS): Conduct studies to integrate Global Personnel Recovery System (GPRS) Public and Government segments, RF Tags, and Combat Survivor Evader Locator (CSEL) Radio systems. Install baseline GPRS on HH-60G Pavehawk helicopter to provide a prototype command, control and tracking system. Conduct cost and operational effectiveness analysis (COEA) of extraction survivability and situational awareness technologies, including cognitive decision aides (CDA), rapid terrain visualization, infrared countermeasures (IRCM), millimeter wave imaging, obstacle avoidance, non-lethal weapons and unmanned aerial vehicles.
- Tactical Missile System –Penetrator (TACMS-P): Initiate the ACTD and begin detailed engineering of the missile system .
- Theater Integrated Planning Subsystem (TIPS): Acquire, integrate and install 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 and distributed collaborative planning will be installed on the new theater-planning suite.

(U) **FY 2002 Plans:** Continue the process of transitioning and initiating ACTDs. Numerous demonstrations will be conducted for those ACTDs initiated in previous years. All FY 1996-initiated ACTDs should end. The demonstration phases of the FY 1997 and FY 1998-initiated ACTDs should be completed. Funding will continue for ongoing ACTDs initiated in FY 1996 through 2001 ($118.917 million total for all prior year ACTDs). Funding available for initiating new FY 2002 ACTDs will be approximately $30 million. (Total ACTD funding: $148.917 million).

(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.
- Tactical High Energy Laser: Conclude the interim capability period and end the ACTD.

FY 1997 Starts:

- Counterproliferation II: Execute two operational demonstrations and perform military utility assessment of AGM-86D CALCM Block II penetrator against a hardened, cut-and-cover WMD facility. Conduct operational tests of the BLU-116 AUP integrated into the Navy's Enhanced Guided Bomb Unit (EGBU-24). Continue RDT&E on Enhanced Payloads. Complete JASSM operational test and demonstration against an above-ground simulated biological weapons facility.
- Extending the Littoral Battlespace: Complete military utility assessment. Refurbish and reinstall partial ELB ACTD-configuration TEMPALT to TARAWA ARG for deployment. Install partial ELB configuration to Theodore Roosevelt Battle Group for deployment. Enter lessons learned into

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appropriate databases/finalize ELB technical documentation. Support transition efforts with appropriate acquisition programs.

- Integrated Collection Management: Commence interim capability support period.
- Joint Advanced Health and Usage Monitoring System: Conduct operational demonstration. Conduct maintenance re-engineering assessment and health and usage monitoring system (HUMS) technology assessment and cost/benefit analysis.
- Military Operations in Urban Terrain: Continue to provide support to residual equipment in Extended Utility Evaluation Phase. Collect RAM data and data on refinement of tactics, techniques, procedures and requirements. Complete transitions and end the ACTD.

FY 1998 Starts:

- Adaptive Course of Action: Complete final hardening and transition of the complete ACOA system to the Global Command and Control System. Complete transition of ACOA operations and maintenance responsibilities to 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, involving the United States (Maneuver Control System Block IV), Canada, Denmark, France, Germany, Italy, the Netherlands, Spain and the United Kingdom, of the database replication capability. A fielding decision on the database replication mechanism will be made based on the demonstration results. Conclude the interim capability support period and end the ACTD.
- Information Assurance: Automated Intrusion Detection Environment: Per operational requirements, begin transition of AIDE to CINCs and other operational components. Multimedia system training aids will be provided. 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 provide technical support. End 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.
- Link-16: Continue operational support to the Combine Air Operations Center (CAOC) in Kosovo. Complete development of DoD Joint Data Network (JDN) TIBS/Link 16 and IDM/Link 16 translation and data forward efforts. Plan to conduct a Joint Service Certification of the Rosetta TIBS/Link 16 and IDM/Link 16 functionality. Transition Rosetta technology (TIB/Link 16) and (IDM/Link 16) to United States Joint Service Acquisition program. Plan continued integration / prototyping of Rosetta technology into LEWK ACTD as the communications node for the tactical UAV payload. End the ACTD.
- Migration Defense Intelligence Threat Data Systems: Conduct final military utility assessment of Joint Risk Assessment Management and deployable server. End the ACTD.
- 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.

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- 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 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: Maintain system at CINC level. Conclude interim capability support phase to end the ACTD.
- Human Intelligence and Counterintelligence Support Tools: Deliver final set of residuals to Defense HUMINT Service, USSOCOM, and appropriate elements of the Services. Finalize Concepts of Operation and Impact Assessments. Support residual participation in exercises and real-world operations.
- Joint Medical Operations-Telemedicine: Transition JMO-T capabilities for the CINC or designated component surgeon to selected units; 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 exercise and produce measures of performance/effectiveness analysis. Begin insertion of CAESAR functionality into participating country's ground stations.
- CINC 21: Demonstrate in Tandem Trust 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.
- 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 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

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(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: Conduct operational assessment of passive surveillance systems for counter drug applications; specifically, passive detection and tracking of air and 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 at Lucky Sentinel 02, Marine Expeditionary Force Exercises (MEFEX) and brigade-level venues. Provide modeling and simulation support to Lucky Sentinel 02, MEFEX and brigade-level venues.
- Multiple Link Antenna System: Fabricate components and assemble interim antenna. Test and initiate MLAS demonstrations in lab and field environments with interim antenna system. Continue design of antenna control system software. Initiate fabrication and integration of final demonstration antenna system. Continue systems engineering efforts leading to antenna configuration demonstrations and field tests.
- 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: Report on military utility of system. Conclude interim capability support period to end the ACTD.

FY 2001 Starts:

- 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 (MEMS) system. Develop a computer model and pre-processor database. Conduct component-level testing.
- 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.

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- 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 development and simulation tests. Conduct hardware-in-the-loop integration tests. Install remote target sensor 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): Demonstrations will continue and increase in scope to accept space-based and tactical sensor inputs. Data from these exercises will form the basis of an interim military utility assessment in mid-FY 2002.
- 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: Conduct a cross-cueing demonstration in a live-fly exercise with the NCCT brassboard capability and a subset of the platforms.
- Personnel Recovery Extraction Survivability Aided by Smart Sensors. Complete prototype design and fabrication of miniature GPRS user device. Demonstrate technologies and conduct military utility assessment of Phase I survivor / evader systems. Complete COEA and preliminary design to integrate extraction survivability technologies on HH-60G Pavehawk. Conduct fabrication and test of 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: Continue software integration of tools supporting conventional targets into the theater-planning suite. A software workflow manager will be integrated 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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(U) ACQUISITION STRATEGY: Not Applicable

(U) B. Program Change Summary	**FY2000**	**FY2001**	**FY 2002**	**Total Cost**
Previous President's Budget Submit	104.976	116.425	118.242	Continuing
Appropriated Value		119.925		Continuing
Adjustments to Appropriated Value				
a. Congressionally Directed undistributed reduction		-.764		
b. Rescission/Below-threshold Reprogramming, Inflation Adjustment	-.592	-.257		
c. Other		-.085	30.675	Continuing
Current President's Budget	104.384	118.744	148.917	Continuing

Change Summary Explanation:

(U) Funding: FY 2000 adjustments were the result of below-threshold reprogramming.
(U) Schedule: Not Applicable
(U) Technical: Not Applicable

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

(U) D. Schedule Profile: Not Applicable

(U) A: Acquisition strategy: Not Applicable

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(U) E. PE Funding for FY 1995 ACTDs:

ACTD	FY 2000
Advanced Joint Planning*	0
Cruise Missile Defense Phase I*	0
Joint Countermine*	.300
High Altitude Endurance Unmanned Aerial Vehicle*	0
Kinetic Energy Boost Phase Intercept*	0
Medium Altitude Endurance Unmanned Aerial Vehicle*	0
Precision SIGINT Targeting System**	0
Precision/Rapid Counter Multiple Launcher*	0
Rapid Force Projection Initiative*	0
Synthetic Theater of War*	0

*Completed

** Completed the demonstration phase of the ACTD

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(U) E. PE Funding for FY 1996 ACTDs

ACTD	FY 2000	FY 2001	FY 2002
Airbase/Port Biological Detection**	1.500	1.100	.800
Battlefield Awareness and Data Dissemination*	3.000	0	0
Combat Identification*	1.400	0	0
Combat Vehicle Survivability*	0	0	0
Counterproliferation I*	5.700	0	0
Counter Sniper*	0	0	0
Joint Logistics**	0	0	0
Joint Readiness Extension to Advanced Joint Planning *	0	0	0
Low Life Cycle Cost, Medium Lift Helicopter*	0	0	0
Miniature Air Launched Decoy**	2.300	3.400	0
Navigation Warfare**	0	0	0
Semi-Automated IMINT Processing*	0	0	0
Tactical UAV*	0	0	0
Theater High Energy Laser**	0	0	0

*Completed

** Completed the demonstration phase of the ACTD

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(U) E. PE Funding for FY 1997 ACTDs

ACTD	FY 2000	FY 2001	FY 2002
Chemical Add-On to Biological Detection*	0	0	0
Consequence Management*	0	0	0
Counterproliferation II	9.200	5.400	0
Extending the Littoral Battlespace	5.800	5.700	7.900
Information Operations Planning Tool**	1.700	1.700	0
Integrated Collection Management	1.800	1.300	0
Joint Advanced Health and Usage Monitoring System	4.200	2.600	2.000
Military Operations in Urban Terrain	.100	6.900	0
Rapid Terrain Visualization	4.000	5.100	0

* Completed

** Completed the demonstration phase of the ACTD

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)	Date: June 2001
APPROPRIATION/BUDGET ACTIVITY RDT&E, Defense-wide/BA 3	R-1 ITEM NOMENCLATURE ADVANCED CONCEPT TECHNOLOGY DEMONSTRATIONS PE 0603750D

(U) E. PE Funding for FY 1998 ACTDs

ACTD	FY 2000	FY 2001	FY 2002
Adaptive Course of Action	5.600	1.700	0
C4I for Coalition Warfare	1.200	2.000	1.200
High Powered Microwave*	0	0	0
Information Assurance: AIDE	4.000	1.700	1.600
Joint Bio Remote Early Warning System	4.000	.200	0
Joint Continuous Strike Environment	2.200	2.400	3.600
Joint Modular Lighter System**	1.300	.400	0
Line-of-Sight Anti-Tank	4.000	0	4.700
Link 16	1.600	1.700	0
Migration Defense Intelligence Threat Data System	.900	1.100	0
Precision Targeting Identification	3.300	1.900	0
Space Based Space Surveillance Operations**	.800	.800	0
Theater Precision Strike Operations	4.900	4.600	0
Unattended Ground Sensors**	1.600	.900	0

*Completed

** Completed the demonstration phase of the ACTD

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(U) E. PE Funding for FY 1999 ACTDs

ACTD	FY 2000	FY 2001	FY 2002
Battle Damage Assessment in the Joint Targeting Toolbox	.400	.200	.200
Coherent Analytical Computing Environment	1.000	1.300	.400
Common Spectral MASINT Exploitation Capability	1.300	1.100	.200
Compact Environment Anomaly Sensor	0	.100	.100
Force Medical Protection	.600	.100	.200
Human Intelligence and Counterintelligence Support Tools	1.900	2.700	.600
Joint Medical Operations Telemedicine	2.900	.600	1.600
Joint Theater Logistics	1.000	0	0
Personnel Recovery Mission Software	.900	.600	0
Small Unit Logistics	.600	0	0
Theater Air and Missile Defense Interoperability	4.300	4.800	2.200

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(U) E. PE Funding for FY 2000 ACTDs

ACTD	FY 2000	FY 2001	FY2002
CINC 21	2.200	9.900	13.600
Coalition Aerial Surveillance and Reconnaissance	2.400	1.900	2.500
Communication/Navigation Outage Forecasting System	0	1.900	1.700
Computerized Operational MASINT Weather	1.000	2.400	1.700
Content-Based Information Security	1.500	1.900	.300
Global Monitoring of ISR Space Systems	.300	.600	.500
Ground-To-Air Passive Surveillance	.300	1.700	2.400
Joint Intelligence, Surveillance and Reconnaissance	.800	5.600	3.200
Multiple Link Antenna System	.884	.494	.900
Quick Bolt	2.100	5.300	9.500
Restoration of Operations	1.000	2.300	4.300
Tri-Band Antenna Signal Combiner	.600	.600	0

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(U) E. PE Funding for FY 2001 ACTDs

ACTD	FY 2001	FY2002
Active Network Intrusion Defense	1.500	2.400
Adaptive Battlespace Awareness	1.800	4.000
Advanced Tactical Laser	2.000	7.900
Advanced Technology Ordnance Surveillance	0	1.317
Coalition Combat Identification	0	0
Coalition Theater Logistics	1.500	3.200
Coastal Area Protection System	.750	0
Hunter Standoff Killer Team	0	0
Joint Area Clearance	2.000	3.600
Loitering Electronic Warfare Killer	1.000	7.900
Network-Centric Collaborative Targeting	3.000	7.900
Personnel Recovery Extraction Survivability Aided by Smart Sensors	1.000	4.000
Tactical Missile System Penetrator	4.300	7.900
Theater Integrated Planning Subsystem	1.200	.900