Exhibit R-2, RDT&E Project Justification							February 2006
OPERATIONAL TEST AND EVALUATION, DEFENSE (0460) BUDGET ACTIVITY SIX				DEVELOPMENT TEST AND EVALUATION (DT&E) PROGRAM ELEMENT (PE) 0605804D8Z			
Cost ($ In Millions)	FY 2005	FY 2006	FY 2007*	FY 2008*	FY 2009*	FY 2010*	FY 2011*
PE 0605804D8Z	107.618	112.199					

***Funds for FY 2007 through 2011 will be found in PE 0605814OTE. The administrative change to the Program Elements in the Operational Test and Evaluation, Defense appropriation was necessary to reflect changes brought about by the June 7, 1999 disestablishment of the Director, Test, Systems Engineering and Evaluation and the subsequent realignment of programs and responsibilities to the Director, Operational Test and Evaluation.**

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

This program element consists of two programs: Test and Evaluation (T&E) Programs and T&E Independent Activities.

The T&E programs are continuing efforts that provide management and oversight of T&E functions and expertise to the Department of Defense (DoD). T&E programs consist of five activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); Center for Countermeasures (CCM); Joint Technical Coordinating Group for Munitions Effectiveness (JTCG/ME); and Joint Aircraft Survivability Program (JASP).

JT&E projects are T&E activities conducted in a joint military environment that are process, rather than product, focused. These multi-Service projects, chartered by the Office of the Secretary of Defense (OSD) and coordinated with the Joint Staff and Services, provide improvements in interoperability of Service systems, improvements in technical and operational concepts, solutions to joint operational issues, development and validation of joint test methodologies, and data for validating models, simulations, and

test beds. JT&E projects solve relevant warfighter issues in a joint T&E environment and develop and improve joint test capabilities and methodologies.

TS projects provide OSD policy and oversight to component threat systems developments ensuring increased commonality, and minimized duplications, and provide consistent threat representation validation for T&E. TS funds management and oversight functions for development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for T&E; integration of T&E requirements for Foreign Material Acquisition (FMA); DoD validation of threat simulators, threat representative targets, and digital threat models; analysis of advanced threat technology applications for simulators and targets; and technical investigations of new approaches and methods for providing a realistic threat environment for operational testing of United States (U.S.) weapon systems.

CCM, a Joint Service Countermeasure (CM) T&E Center, conducts analysis, T&E, and assessment of U.S. and Foreign Electro-Optical (EO), Infrared (IR), and Millimeter Wave (MMW) precision guided weapons (PGW) and systems, countermeasures, counter-countermeasures, and warning devices for the Services, T&E Agencies, the Intelligence Community, and Homeland Defense. CCM's staff and CM knowledge based developed over more than 30 years provide the DoD acquisition community and the warfighting Combatant Commanders with the information and expertise necessary to ensure the survival of U.S. forces on the increasingly hostile modern battlefield.

JTCG/ME was chartered by the Joint Logistics Commanders (JLC) more than 30 years ago to serve as DoD's focal point for authenticated non-nuclear munitions effectiveness information (Joint Munitions Effectiveness Manuals (JMEMs)) on all major non-nuclear U.S. weapons. JTCG/ME, under the auspices of the JLCs, authenticates weapons effectiveness data for use in training, systems acquisition, weapon procurement, and combat modeling. JMEMs are used by the Armed Forces of the U.S., NATO, and other allies to plan operational missions, support training and tactics development, and support force-level analyses. JTCG/ME also develops and standardizes methodologies for evaluation of munitions effectiveness and maintains databases for target vulnerability, munitions lethality, and weapon system accuracy. Based on operational lessons learned (Southern/Northern Watch, Enduring Freedom, Iraqi Freedom), Combatant Commands (COCOMs) and Service input, specific weapon-target pairings and methodology voids were identified. These voids were created by the fielding of new weapon systems, evolving threat target sets, and a more stringent operating environment (specifically, the focus on reduced collateral damage). As a result of Joint Staff J8's review and endorsement, the DoD increased the JTCG/ME budget to correct these deficiencies. The FY 2005-2011 funding will develop target geometry models (e.g., surface mobile/fixed, air, hard/deeply buried, and ship targets) and vulnerability data. This data will be

combined with weapons characteristics, delivery accuracies, and methodology enhancements to produce effectiveness indices for the specific weapon-target pairings identified by the COCOMs and Services.

The Joint Logistics Commanders (JLC) originally chartered JASP in 1971 to serve as DoD's focal point for the joint service community to enhance the non-nuclear combat survivability of aircraft. The Commanders of Naval Air Systems Command (NAVAIR), Aviation and Missile Command (AMCOM), and Aeronautical System Center (ASC) (Tri-Service Joint Aeronautical Logistics Commanders (JALC)) re-chartered this program, which acts as the DoD focal point for aircraft susceptibility and vulnerability reduction research as well as survivability modeling and simulation (M&S) methodology. JASP is the Executive Agent for the Joint Live Fire Aircraft Program managed by the Live Fire Test office of the Director, Operational Test & Evaluation (DOT&E). JASP also develops and standardizes methodologies for the evaluation of aircraft survivability (susceptibility and vulnerability) to threat weapons.

The Test and Evaluation Independent Activities is the only source of funding for DOT&E studies; analyses; and management to provide continuing support of policy development oversight of the DoD test and evaluation practices, infrastructure and resources; and transformation of test methods and infrastructure to ensure future defense systems provide necessary joint warfighting capabilities. Studies and analyses examine the implications and consequences of current and proposed policy, plans, operations, strategies, and budgets and, are essential for the accomplishment of the DOT&E mission. This PE funds travel in support of its activities.

This Research Category 6.5 PE supports management activities for the DOT&E oversight responsibility for T&E and T&E resources.

Accomplishments/Planned Program:

FY 2005 Accomplishments:

T & E Programs:

JT&E:

- Completed Joint Cruise Missile Defense (JCMD), Joint Command and Control, Intelligence Surveillance and Reconnaissance (JC2ISR), Joint Unmanned Aerial Vehicle – Time Sensitive Operations (JUAV-TSO), and Joint Methodology to Assess C4ISR Architecture (JMACA) Joint Tests, delivered test products, conducted out briefings, distributed the final reports, and transitioned capabilities.
- Completed Joint Shipboard Weapons and Ordnance (JSWORD), Quick Reaction Test (QRT), delivered test products, conducted out briefings, distributed the final reports, and transitioned capabilities.
- Continued Joint Logistics Planning Enhancements (JLOG-PE), Joint Data Link Information Combat Execution (JDICE), Joint Integration and Interoperability of Special Operations (JIISO), and Joint Space Control Operations – Negation (JSCO (N) Joint Tests.
- Reviewed feasibility study results and chartered Joint Fires Coordination Measures (JFCM) as a Joint Test.
- Conducted JT&E annual review of nominations and directed Joint Test and Evaluation Methodology (JTEM), Global Combat Support System (GCSS), Joint Mobile Network Operations (JMNO), Joint C2 for War on Terror Precursor (JC2WPO), and Joint Integrated (Interagency and International (Command and Control for Maritime Homeland Defense) (JICM) to conduct feasibility studies in FY 2005 to FY 2006.
- Conducted periodic reviews of nominations for potential QRTs and directed Joint Forward Operations Base Force Protection (JFOB) and Joint Shipboard Ammunition and Ammunition Boards to conduct QRT from FY 2005 to FY 2006.

Threat Systems:

- Simulators:
  - Provided threat support to T&E through investigations of current scientific and technical intelligence information for insertion in Service threat representation modeling programs (e.g., IR Air-to-Air Missile Engineering Analysis, Hybrid Simulator, and Threat 3D Assessment Tool).
  - Provided 250 threat and test resource assessments for DOT&E analysis of programs on OSD's T&E Oversight List.
  - Chaired the DOT&E Threat Representation Validation Report Review Committee (TRVRRC) that reviews/approves 12 Service-developed threat simulator and digital threat model validation reports on simulated foreign materiel used in T&E.
  - Conducted technical investigations to identify solutions for effectively representing asymmetric threats, to include Chemical, Biological, Radiological, and Nuclear (CBRN); Information Warfare (IW); and terrorism-related threats to Homeland Defense in testing of U.S. weapons systems.

- Performed analysis for the cooperative technical research and test bed projects to ensure threat representation (e.g., Reactive Plume Simulator Study, and Advanced SAM Integrated Technical Evaluation & Analysis of Multiple Sources (ITEAMS) adequacy for T&E.
- Improved threat missile representations used in end-to-end testing of missile warning and countermeasures effectiveness (e.g., Threat Electronic Warfare Simulation Study, Virtual Electronic Warfare Test Range, and Pre-Emptive Infrared Countermeasures (IRCM) Functionality, and IRCM Test Capabilities Working Group).
- Developed the tools to exchange the latest scientific and technological information between T&E and intelligence communities (e.g., Directed Energy Threat Study, Frequency Modulated Reticle Convolution Technology, and Advanced Threat Systems Analysis).
- Performed technical investigations and identified improvements to threat representations to ensure threat adequacy for multi-spectral sensor fusion T&E environments (Threat Integration into Real Time Casualty Assessment (RTCA)) Study, and Anti-Aircraft Artillery (AAA) J-Band Advanced Technology Simulator ((JBATS) study).
- Continued oversight of Service threat simulator and digital threat model development and validation efforts (e.g., Threat Simulator Shortfalls Study, and Threat Radio Frequency Fusing Simulation Study).
- Updated the Automated Joint Threat Systems Handbook, produced and distributed CD-ROM version 10.2 to more than 400 users, and updated and maintained the SIPRNET version.

- Targets:
  - Conducted studies that will reduce the cost of targets and/or target presentation cost (e.g., 3D Enhancement Range Data Studies, Advanced Off-board Countermeasures, and Low-cost Lightweight Programmable Target Mover).
  - Continued technical studies that will lead to improved threat representation of targets (e.g., IR Signature Coating Improvement, Advanced Ground Target Threat System, Low-cost Lightweight Programmable Target Mover, Advanced Antenna, and Torpedo Threat Emulation).
  - Continued ongoing support to the Defense Science Board study of aerial targets.
  - Continued oversight of Service threat representative targets.
  - Updated the Target Management Office Web to include additional program and study information.
  - Conducted research study on foreign target procurement.
  - Conducted studies that will lead to improved scoring capabilities (e.g., Matrix Round Location).

CCM:

CCM tested, analyzed, reported, provided CM subject matter expertise, or otherwise supported more than 40 U.S. and foreign PGW systems/components in a countermeasure environment, as well as CM and threat-warning systems and other activities and programs, as listed below:

- Air Force:
  - Directed Infrared Countermeasure (DIRCM), Small Diameter Bomb, CV-22, LITENING-AT Pod, SNIPER XR, Lazarus Operational Assessment, Electronic Validation and Demonstration (EVAD) Phase 2, Large Aircraft Infrared Countermeasure (LAIRCM) Next Gen, and Powered-Low Cost Autonomous Acquisition System (P-LOCAAS).
- Army:
  - AH-64 Apache Aircraft Survivability, Suite of Integrated Infrared Countermeasures (SIIRCM), C-12 Aircraft Survivability Equipment (ASE), Army Theater Support Vessel (TSV), Future Combat System (FCS), Tactical UAV, Wide Area Munition, Enhanced Precision Guided Missile (EPAM), Enhance Loitering Attack Missile (ELAM), and the Armed Reconnaissance Helicopter (ARH).
- Navy/Marines:
  - Low Altitude Surface-to-Air Missile Countermeasure (LOWALT), VX-9 IR Surface-to-Air Missile (SAM), Tactical Development and Evaluation (TAC D&E), AH-1W Cobra Night Targeting System (NTS), Vertical Takeoff Unmanned Aerial Vehicle (VTUAV), SHIELDS, Extended Range Guided Munition (ERGM), Tactical Aircraft Directed Infrared Countermeasure (TADIRCM), AH-1W Cobra Signature Reduction, Laser Beamrider Countermeasure (Starlight), Shipboard Laser Acquisition System (SBLAS), MV-22, Electronic Warfare Integrated System for Small Platforms (EWISSP), Brite Star, and Raven laser warning sensor.
- Foreign:
  - Night Attack Vision Exploitation (NAVE)-G, Foreign Rangefinder Exploitation and Evaluation (FREE)-G, GD-1 smoke grenade, Foreign False Target Generator (FFTG), Foreign Laser Guided Missile (FLGM), Foreign Laser Beam Rider - Live Fire (FLBR-LF). Foreign Global Positioning (FGPS), and Foreign Laser System Tests (FLST).
- M&S:
  - Incorporated Infrared (IR) flare and IR threat missiles into MV-22 and CV-22 models.
- Other:
  - Panels:

  - The Technical Coordination Panel (TTCP).
  - Foreign Material Exploitation Working Group.
  - Precision Strike Association.
  - Threat Simulation Investment Working Group.
  - Joint Aircraft Survivability Program.
  - Air Force Directed Energy Task Force – Laser.
  - Air Force Directed Energy Task Force – High Powered Microwaves.
- Provided CM inputs for evolving programs, identified by the Service Acquisition PEOs/PMs.
- CM Warfare Project:
  - Coordinated CM Warfare support at the Combatant Command and MAJCOM levels.
  - Participated in T&E Task list operational warfighting exercises and simulations.
  - Joint Forces Command/Marine Aviation Weapons and Tactics Squardron-1 (JFCOM/MAWTS-02-05).
  - USMC Desert Talon 1-05 pre-deployment OIF Exercise.
  - Continued to provide inputs for EO/IR CM training and Joint Interoperability.
  - Continued to assist in the development of software modifications to Joint level simulations (JCATS).
  - Designated as Subject Matter Organization for Joint Chiefs of Staff (JCS) Universal Joint Task List.
- Continued to provide technical and analytical expertise to DOT&E assessment tasks.
- Provided DARPA test, analysis, and assessment support.
- Provided test support to Joint Low Altitude Aircraft Survivability (JLAAS) Quick Reaction Test (QRT) JT&E program.
- Continued development of the Joint Mobile Infrared Test System (JMITS) missile simulator.

JTCG/ME:

- Developed JMEM data for most critical Combatant Commander identified systems. Released Target Oriented JMEM CD-ROM (JMEM Weaponeering System (JWS) v1.0 – JMEM/Air-to-Surface Weaponeering System (JAWS) v2.3.2 and JMEM/Surface-to-Surface Weapons Effectiveness System (JWES) v3.1.1) and Joint Anti-Air Combat Effectiveness - Air Superiority (J-ACE: AS) v3.1. Continued updates of existing JMEMs CD-ROMs (i.e., JWS v1.2 and J-ACE: AS v3.2). Continued to reduce CD-ROM update cycles through incremental updates.

- Released Advanced Joint Effectiveness Model (AJEM) Standard Usage Guide (ASUG) for v2.3 and prepared tri-Service approved input files for vulnerability data generation.
- Developed tri-Service vulnerability/lethality methodology for the IO program.
- Developed tri-Service vulnerability/lethality methodology for the Directed Energy Weapons (DEW) program.
- Distributed products via the classified internet with the Joint Product and Information Access System (JPIAS) (Books-on-line, Automated products, Models, Tri-Service Data, and Support services – Combatant Command Requirements, JSTDSG and Combatant Command Targets Execution Group (CTEG)).
- Continued the development of standardized models/operational tools and methodology for Air-to-Surface, Surface-to-Surface and Anti-Air effectiveness calculations and conducted Configuration Management (i.e., Joint Service Endgame Model (JSEM), Advanced Joint Effectiveness Model (AJEM), Joint Mean Area of Effectiveness (JMAE),
- Advanced Ship Analysis Program (ASAP), Penetration Curverlinear in 3 Dimensions (PENCRV3D), Modular effectiveness Vulnerability Analysis (MEVA), Windows for Joint Munitions Effectiveness Manual (WinJMEM), Target Complex Model (TARCOM), Guided Weapons Trajectory Simulation (GWTS), Paveway Munition Planning Tool (PMPT), JMEM Air-to-Surface Trajectory (JAT), Ship Target Analysis Tool (STAT), Building Analysis Module (BAM), Hard Target Model (HTM), Joint Gun Effectiveness Model (JGEM), Joint Air-to-Air Model (JAAM), Bridge Analysis System (BAS), Joint Gun Effectiveness Model (JGEM), and Joint Smart Weapons Module (JSWM)).
- Expanded existing databases to incorporate data for newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Anti-Air).
- Conducted tri-Service technical coordination meetings to address CTEG data generation and methodology improvements to include Special Operations Gun Ship, Military Operations in Urban Terrain (MOUT) environment and Rotary Wing Aircraft.
- Along with Joint staff identified critical COCOM targets through the Munitions Requirements Process (MRP) in support of FY2006 program build requirements.
- TSO and intelligence community (i.e., National Ground Intelligence Center (NGIC), National Air and Space Intelligence Center (NASIC), Missile and Space Intelligence Center (MSIC), Office of Naval Intelligence (ONI), and Defense Intelligence Agency (DIA) improved intelligence data collection efforts for Target Geometry Model (TGM) development.
- Engaged near-term acquisition programs to support JMEM production at system Initial Operations Capability (IOC) (i.e., bring critical developmental systems into the JMEM process).
- Resolved National Disclosure Policy issues relative to JMEM product disclosure (JWS v1.0) for foreign customers and coalition operations.

- The DoD increased (see page 2 of this Descriptive Summary) the JTCG/ME budget funded the following projects to address critical COCOM and Service requirements:
  - Developed the target geometry model (TGM), generated vulnerability data, and produced JMEM data for approximately 50 high-priority Combatant Command targets (e.g., surface mobile/fixed, air, hard/deeply buried, and ship targets) producing approximately 3000 weapon-target pairings.
  - Developed target surrogation techniques to develop JMEM data for COCOM Radar and Maritime targets.
  - Enhanced collateral damage and above/below ground hardened target methodologies (Fast Assessment Strike Tool-Collateral Damage (FAST-CD), BAM, HTM, and Integrated Munitions Effectiveness Assessment (IMEA)). Leveraging JWAC and DTRA cooperative efforts.
  - Accelerated the move to a capabilities based JMEM, accounting for newly fielded systems employing other than traditional kinetic damage mechanisms.
  - Advanced efforts to provide connectivity to real time planning systems assessing time sensitive targets (i.e., Joint Targeting Toolbox (JTT), Joint Mission Planning System (JMPS), etc.).
  - Developed JMEM training materials to support Service/Joint schools.
  - Monitored technical and funding execution on all FY 2005 projects. Implemented performance measures on all FY 2005 JTCG/ME projects based on the delivery of the final product.

JASP:

- Completed High Power Wideband Array project.
- Completed Laser Focal Plane Array Effects Modeling for Laser Countermeasures Optimization.
- Completed High-Resolution Infrared Counter Measures (IRCM) Measurements project.
- Completed Hostile Fire Indication project.
- Completed Covert Infrared Counter Measure Flare.
- Completed Manned Portable Defense System (MANPADS) Impact Point Assessment project.
- Completed Bonded Wing Survivability Demonstration project.
- Completed Advanced Survivable Rotorcraft Validation project.
- Completed MANPADS Damage Effects Modeling project.
- Completed Test Plan and Final Report Guide project.
- Completed Joint Resistance to Hydrodynamic Ram (HRAM) project.
- Completed Intumescent “Instant Firewall” project.
- Completed Assessment of Tank Wall Pressures for Enhanced Ram (ERAM) Validation.
- Completed Complex Composite Rotorcraft Structures Survivability project.

- Completed Follow-on Issues for Weapons Bay Vulnerability Reduction.
- Completed Aircraft Structure/Flare Buckets project.
- Completed Unmanned Aerial Vehicle (UAV) Vulnerability Reduction Design Guide project.
- Completed Rotary Wing Battle Damage Assessment and Repair (BDAR) project.
- Completed Integrated Survivability Assessment (ISA) project.
- Completed Directed Radio Frequency Energy Assessment Model Upgrade, Verification, and Validation.
- Completed Advanced Low Altitude Radar Model Simulation Upgrades.
- Continued Special Material Urban Decoy project.
- Continued Common Service Exciter project.
- Continued Countermeasures Susceptibility of Several New Foreign Threat Infrared Seekers.
- Continued Reactive Infrared Suppressor project.
- Continued Impact of Electronic Limiting on Imaging Seeker Countermeasures project.
- Continued Low Cost Helicopter IRCM Components for Advanced Threats.
- Continued Affordable Visible Missile Warning System project.
- Continued Millimeter Wave Electronic Wave Receiver for Stand-In Jammer project.
- Continued Miniaturized Countermeasures for UAVs project.
- Continued Investigation of MANPADS Damage Effects on Large Aircraft Engines project.
- Continued Automatic Engine Fire Suppression System project.
- Continued Rocket Propelled Grenade (RPG) Damage Effects Modeling project.
- Continued Survivability Vulnerability Information Analyses Center (SURVIAC) Model and Simulation Accreditation support.
- Continued SURVIAC Model Manager support.
- Continued Computation of Vulnerable Areas and Repair Time/Fast Shotline Configuration Control Board support.
- Continued Dry Bay Fire Model/WINFIRE enhancements.
- Continued Simulink Environment and Tools for Advanced Infrared Seeker Susceptibility Analysis.
- Continued Integrated Survivability Assessment Demonstration for Multi-mission Maritime Aircraft project.
- Continued Enhanced Surface to Air Missile Simulation Migration project.
- Continued Imaging Infrared Sensor and Laser Effects Model Development.
- Continued COVART Modularization.
- Continued the JASP Internet site.
- Continued Joint Combat Assessment Team (JCAT) efforts.

- Continued Publishing the Aircraft Survivability Magazine.
- Initiated and completed Initial Characterization of IR MANPADS.
- Initiated and completed MANPADS Fuzing.
- Initiated and completed Radar Directed Gun Simulation Configuration Control Board support.
- Initiated IR Hollow Core Photonic Bandgap Fibers project.
- Initiated Special Material Aerial Urban Decoy – Reduced Optical Signature Expendable Solutions Decoy.
- Initiated Reduced Optical Signature Expendable Solutions-Black Flare.
- Initiated RPG Characterization Testing and Modeling Support project.
- Initiated Joint Service BDAR Capability Improvement Program.
- Initiated UAV Wing HRAM Mitigation project.
- Initiated Fuel Tank Ullage Vulnerability project.
- Initiated Pre-Integrated Armor Panel System.
- Initiated Hardware Accelerator for Reticle Processing for Infrared Missile Simulations project.
- Initiated Fire Initiation Test and Methodology Development project.
- Initiated ESAMS Cooperation Assessment Team Wrap-Up and Transition.
- Initiated Fire Prediction Model (FPM) Modularization.
- Initiated FPM Emergency Repairs.
- Initiated JCAT Vulnerability Visualization Tool.
- Initiated JASP Secret Internet Protocol Routing Network site.
- Initiated JASP Aircraft Survivability Short Course.

T&E Independent Activities:

- Continued analytical support for the Director's role as the principal adviser to the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics on operational and live fire test and evaluation and as the principal test and evaluation official within the senior management of the DoD.
- Continued analysis to support promulgation of policies and procedures for the conduct of operational test and evaluation and live fire test and evaluation in the DOD, and analysis relating to the composition of the Major Range and Test Facility Base.
- Continued analysis to support the provision of guidance to, and consultation with, senior Department of Defense officials with respect to operational and live fire test and evaluation resources and facilities in the Department.

- Continued analysis to support review and recommendations to the Secretary of Defense on all budgetary and financial matters relating to operational and live fire test and evaluation, including operational test facilities and equipment.
- Continued analysis to support statutory annual reporting to the Secretary of Defense and the Congress on operational test and evaluation, including comments and recommendations on resources and facilities available for operational and live fire test and evaluation and levels of funding made available for operational and live fire test and evaluation activities.
- Continued analysis to support compliance with requests from Congress for information relating to operational test and evaluation in the DOD.
- Continued analysis to develop technical alternatives on issues affecting T&E resources and infrastructure.
- Continued analyses to support the Director's operational and live fire test resource requirements for the statutory biennial strategic plan reflecting the needs of the Department with respect to T&E facilities and resources.
- Administrative Support:
    - Procured administrative support to carry out oversight of DOT&E programs.
- Accounting and Financial Management Support:
    - Provided accounting and financial management support to the DOT&E.

FY 2006 Plans:

T & E Programs:

JT&E:

- Continue Joint Space Control Operations – Negation (JSCO (N), Joint Integration and Interoperability of Special Operations (JIISO), JFCM, and JDICE Joint Tests.
- Continue FY 2005 directed Quick Reaction Tests JSAABR.
- Determine which FY 2005 Joint Feasibility Studies will be chartered as Joint Tests and commence testing activities.
- Conduct JT&E annual review of nominations for potential feasibility studies and execute them in FY 2006 to FY 2007.
- Conduct periodic reviews of nominations for potential QRT and execute them in FY 2006 for FY 2007.
- Complete Joint Logistics Planning Enhancements (JLOG)-PE Joint Test, deliver test products, conduct out briefings, distribute the final reports, and transition capabilities.
- Complete JFOB and Joint Low Altitude Aircraft Survivability (JLAAS) Quick Reaction Tests, deliver test products, conduct out briefings, distribute the final reports, and transition capabilities.

Threat Systems:

- Simulators:
  - Continue oversight of Service threat simulator and digital threat model development and validation efforts (e.g., Threat Simulator Shortfalls Study, and Threat Radio Frequency Fusing Simulation Study).
  - Continue threat support to T&E through investigations of current scientific and technical intelligence information for insertion in Service threat representation modeling programs.
  - Examine the need to provide a threat representative electronic warfare environment (RF&IR) that will support network centric program T&E.
  - Provide threat and test resource assessments for DOT&E analysis of programs on OSD's T&E Oversight List.
  - Characterize threat simulation capabilities (e.g., System Integration Laboratory/Hardware In The Loop/Installed Systems Test Facility/Open Air Range (SIL/HITL/ISTF/OAR)) needed to test advanced technology Infrared Countermeasures (IRCM) systems and advanced missile systems (e.g., IR Model Converter, SA-7 MANPADS Simulator – Signal Processor in the Loop (SPIL) and Flex-Play Plume Simulator Upgrade to Joint Mobile Infrared Test System (JMITS).

- Continue improvements to threat missile representations used in end-to-end testing of missile warning and countermeasures effectiveness (e.g., Advanced Test Capabilities Working Group, Threat Electronic Warfare (EW) Simulation Study, and Virtual Electronic Warfare Test Range.
- Implement common threat missile fly-out models used for T&E (e.g., Electronic Warfare Simulation Module, Radio Frequency MATLAB/Simulink Fly-out Model Integration, Enhanced Missile Signature Model (EMSIG), and Mission Model-Radar Integration).
- Continue to chair DOT&E Threat Representation Validation Report Review Committee (TRVRRC) to review or approve Service-developed threat simulator and digital threat model validation reports on simulated foreign materiel used in T&E.
- Continue technical investigations to identify solutions for effectively representing asymmetric threats, to include Chemical, Biological, Radiological, and Nuclear (CBRN) threats; Information Warfare (IW); and terrorism-related threats to Homeland Defense in testing of U.S. weapons systems.
- Update the Automated Joint Threat Systems Handbook, produce and distribute to more than 425 users, and update and maintain SIPRNET version.
- Conduct technical investigations and identify improvements to threat representations to ensure threat adequacy for multi-spectral sensor fusion T&E environments (e.g., Threat Integration into Real Time Casualty Assessment (RTCA) Study).
- Continue the cooperative technical research and test bed projects to ensure threat representation (e.g., Reactive Plume Simulator Study, and Advanced Surface to Air Missile Integrated Technical Evaluation & Analysis of Multiple Sources (ITEAMS)) adequacy in T&E.
- Continue to provide the tools to exchange the latest scientific and technological information between T&E and intelligence communities (e.g., Directed Energy Threat Study and Frequency Modulated Reticle Convolution Technology).
- Examine the capabilities needed to execute robust and combined test events in a realistic threat environment with multiple and simultaneous threats for programs (e.g., Integrated Threat Information Operations Laboratory, and Constructive Verification and Validation (V&V) Threat Demonstration, and Infrared Missile Countermeasure Simulation).

- Targets:
  - Provide OSD seed funds to prototype solution to highest priority deficiencies in current target systems.
  - Provide oversight of the Service activities in support of DoD.

- Conduct studies that will reduce the cost of targets and/or target presentation cost (e.g., 3D Enhancement Range Data Study, Mobile Ground Targets, Target Control, Air Superiority Target, MOUT Target Structures, Electronic Target Generator, Advanced Ground Target Threat System, and Low-cost Lightweight Programmable Target Mover).
- Continue technical studies that will lead to improved threat representation of targets or address operational test target resource issues that were reported within the FY 2005 Defense Science Board report on Aerial Targets (e.g., Threat "D", Rotary Wing Targets Requirements Study, Air Superiority Target, and Target Control).
- Examine ongoing integration of electronic warfare and computer network operations. Examine the use of hardware replica prototypes, actuals and/or simulators along with associated software and electronic systems to facilitate testing capabilities within integrated IO facilities and ranges requiring target support (e.g., Information Operations Traffic Generator).
- Continue developments that lead to improved threat representative ground targets (including digital simulations of ground targets) suitable for testing of weapons (air and ground) with multi-mode seekers and/or aerial surveillance/reconnaissance systems used for precision targeting.
- Continue ongoing examination of improved threat aircraft signature representation, target presentation utility and lowered procurement costs (using augmented subscale or full scale aerial targets) for end-to-end testing of advanced air defense missiles (e.g., GQM-163A Air Launch/High Dive, AESA).
- Conduct research to characterize the threat environment needed for testing of large footprint and extended-range weapons and sensors, including beyond-line-of sight targeting, improved methods of hazard area calculations, and remote control/operation of threat lay down.
- Provide ongoing studies that lead to the development of targets and threats in support of Offensive and Defensive Counter-space systems and subsystems (e.g., Satellite Emulation System).
- Conduct technical Studies that examine potential target solutions to recent changes in intelligence assessments.

CCM:

CCM will test, analyze, report, provide CM subject matter expertise, and otherwise support more than 40 U.S. and foreign PGW systems/components in a countermeasure environment, as well as CM and threat-warning systems and other activities and programs, as listed below:

- Air Force:
    - Small Diameter Bomb, Large Aircraft Infrared Countermeasure (LAIRCM) Nex Gen, Low Cost Missile Warning System, C-5 Force Development Evaluation (FDE), C-130 FDE, AFSOC FDECV-22,

LITENING-AT Pod, SNIPER XT Pod, Challenger 601, Electronic Validation and Demonstration (EVAD) Phase 2, Multi-function Electro-optical Defense of United States Aircraft (MEDUSA), and Powered-Low Cost Autonomous Acquisition System (P-LOCAAS).

- Army:
  - Future Combat System (FCS), Arrowhead AH-64 Targeting System, Enhanced Loitering Attack Missile (ELAM), AH-64 Apache Aircraft Survivability Equipment (ASE), MH-47 Reduced Optical Signature Emissions Solution (ROSES), and the Armed Reconnaissance Helicopter (ARH).
- Navy/Marines:
  - SHIELDS, AH-1W Cobra Night Targeting System (NTS), Tactical Aircraft Directed Infrared Countermeasure (TADIRCM), Brite Star, Gunfire and Ordnance Detection System (GODS), AN/AAR-47 v3 Missile/Laser Warning, Laser Beam Rider Missile Countermeasure (Starlight), NATO LADAR, MV-22, Electronic Warfare Integrated System for Small Surface Platforms (EWISSP), Low Altitude Surface-to-Air Missile Countermeasure (LOWALT), Targeting Sight System, UH-1Y Operational Evaluation (Op Eval), and AH-1Z Op Eval.
- Foreign:
  - Night Attack Vision Exploitation (NAVE)-G, Foreign Rangefinder Exploitation and Evaluation (FREE)-G, GD-1 smoke grenade, Foreign False Target Generator, Foreign Laser Guided Missile, GALIX smoke grenade, MASKE smoke grenade, Foreign Laser Beamrider Exploitation (FLEX), Foreign Laser System Test (FLST), and Foreign Global Positioning System (FGPS).
- M&S:
  - CV-22 Test support.
- Other:
  - Panels:
    - The Technical Coordination Panel (TTCP).
    - Foreign Material Exploitation Working Group.
    - Precision Strike Association.
    - Threat Simulation Investment Working Group.
    - Air Force Directed Energy Task Force – Laser.
    - Joint Aircraft Survivability Program.
  - Department of Homeland Security (DHS) MANPADS.
  - Provide CM inputs for evolving programs, identified by the Service Acquisition PEOs/PMs.

- CM Warfare Initiative:
  - Coordinate CM Warfare support at the Combatant Command and MAJCOM levels.
  - Participate in T&E Task list operational warfighting exercises and simulations.
  - Support JNTC sponsored MAWTS-1, and Service sponsored Desert Talon exercises.
- Continue to provide inputs for EO/IR CM training, equipment, and Joint Interoperability.
- Continue to develop software modifications to Joint and Component Service level simulations (JCATS).
- Subject Matter Organization for selected JCS Universal Joint Task Lists (UJTLs).
- Support appropriate Quick Reaction Tests.
- Coordinate Joint PGM Countermeasures Publication.

- Continue to provide technical and analytical expertise to DOT&E assessment tasks.
- Complete development of the Joint Mobile Infrared Test System (JMITS) missile simulator.

JTCG/ME:

- Develop and release JWS v1.1 (JAWS v2.4 and JWES V4.0) which will contain JMEM/Air-to-Surface and Surface-to-Surface weapons.
- Develop and release J-ACE: AS v3.2 which will contain Joint Air-to-Air Model (JAAM) v3.2.
- Develop JMEM data for most critical Combatant Commander identified systems.
- Continue to reduce CD-ROM update cycles through incremental updates.
- Release AJEM v2.5 and continue to update AJEM input files for JTCG/ME standard weapons.
- Update and publish 61 JTCG/ME-1-8 “Requirements for Generating, Documenting, Reviewing, and Approving JTCG/ME Vulnerability Data”.
- Continue to develop tri-Service JMEM methodology for the IO program.
- Continue to develop tri-Service JMEM methodology for the Directed Energy Weapons program.
- Distribute products via the classified internet with the Joint Product and Information Access System (Books-on-line, Automated products, Models, Tri-Service Data, and Support services – Combatant Command Requirements, JSTDSG, and CTEG).
- Continue the development of standardized models/operational tools and methodology for Air-to-Surface, Surface-to-Surface and Anti-Air effectiveness calculations and conduct Configuration Management.

- Continue expansion of existing databases to incorporate data for newly fielded weapons (i.e., Air-to-Surface, Surface-to-Surface Direct/Indirect Fire, and Anti-Air).
- Continue execution and technical coordination efforts to address CTEG data generation and methodology improvements.
- Review and prioritize target requirements based on DoD Munitions Requirements Process (MRP) document in support of FY 2007 program build requirements.
- Conduct workshops with intelligence community (i.e., NGIC, NASIC, MSIC, ONI and DIA) to collect intelligence data for Target Geometry Model (TGM) development.
- Continue to engage near-term acquisition programs to support JMEM production at system IOC.
- Continue to work National Disclosure Policy issues relative to JMEM product release for foreign customers and coalition operations.
- Develop the TGM, generate vulnerability data, and produce JMEM data for approximately 60 high-priority Combatant Command targets (e.g., maritime, infrastructure, strategic, maneuver, air, and integrated air defense systems targets).
- Review and approve tri-Service target surrogation techniques/methodologies to meet JMEM requirements.
- Enhance collateral damage and above/below ground hardened target.
- Implement a capabilities based JMEM, accounting for newly fielded systems employing other than traditional kinetic damage mechanisms.
- Advance efforts to provide connectivity to real time planning systems assessing time sensitive targets (i.e., Joint Targeting Toolbox, Joint Mission Planning System, Advanced Deep Operations Coordination System, Air – Theater Battle Management Core Systems, and Naval Fires Control System, etc.
- Conduct on-site JMEM training to Service/Joint course instructors/trainers.
- Continue to monitor technical and funding execution on all FY 2006 projects. Implement performance measures on all FY 2006 JTCG/ME projects based on the delivery of the final product.

JASP:

- Complete Special Material Urban Decoy project.
- Complete Common Service Exciter project.
- Complete Countermeasures Susceptibility of Several New Foreign Threat Infrared Seekers.
- Complete Reactive IR Suppressor project.
- Complete Low Cost Helicopter IRCM Components for Advanced Threats project.

- Complete Affordable Visible Missile Warning System project.
- Complete MMW EW Receiver for Stand-In Jammer project.
- Complete SMAUD-ROSES Decoy.
- Complete ROSES-Black Flare.
- Complete Automatic Engine Fire Suppression System project.
- Complete RPG Damage Effects Modeling project.
- Complete Investigation of MANPADS Damage Effects on Large Aircraft Engines project.
- Complete Joint Service BDAR Capability Improvement program.
- Complete UAV Wing HRAM Mitigation project.
- Complete Pre-Integrated Armor Panel System.
- Complete Fire Prediction Model Emergency Repairs.
- Complete JCAT Vulnerability Visualization Tool.
- Complete Simulink Environment and Tools for Advanced Infrared Seeker Susceptibility Analysis.
- Complete ESAMS Migration project.
- Complete Hardware Accelerator for Reticle Processing for IR Missile Simulations project.
- Complete COVART Modularization.
- Complete Fire Initiation Test and Methodology.
- Complete ESAMS Cooperative Assessment Team (ECAT) Wrap-up & Transition.
- Complete Fire Prediction Model (FPM) Modularization.
- Continue Impact of Electronic Limiting on Imaging Seeker Countermeasures project.
- Continue MMW Radar Warning Receiver for UAVs project.
- Continue IR Hollow Core Photonic Bandgap Fibers project.
- Continue Fuel Tank Ullage Vulnerability project.
- Continue RPG Characterization Test & Modeling Support.
- Continue ISA Demonstration for MMA project.
- Continue SURVIAC Modeling & Simulation (M&S) Accreditation Support.
- Continue SURVIAC Model Manager support.
- Continue COVART/FASTGEN CCB support.
- Continue Day Bay Fire Model (DBFM)/WINFIRE enhancements.
- Continue JASP Internet site.
- Continue JCAT efforts.

- Continue publishing the Aircraft Survivability Magazine.
- Continue JASP SIPRNET site.
- Continue JASP Aircraft Survivability Short Course.
- Initiate and complete Fuel Inerting and Hydrodynamic Ram Attenuation.
- Initiate and complete Vulnerability End Game Road Map.
- Initiate and complete Probability of Kill Methodology Workshops.
- Initiate False Alarm Reduction Technology.
- Initiate Affordable Laser IRCM Survivability System (ALISS).
- Initiate Ground Fire to Enhance Aircrew Situational Awareness Detection, Classification and Location.
- Initiate Multifunctional Structures for Ballistic Protection.
- Initiate Spaced Armor for Rotorcraft.
- Initiate Hydrodynamic Ram Mitigation through Pressure Wave Interaction.
- Initiate Intumescent Coatings “Instant Firewall” for Passive Dry Bay Fire Protection.
- Initiate MANPADS Damage Effects Models.
- Initiate High Explosive Incendiary (HEI) Projectile Damage Effects Models.
- Initiate Structural Response to Internal Blast.
- Initiate ESAMS Validation.
- Initiate Fuel Bladder Survivability for Fire Prediction Model.
- Initiate ISA Implementation for ACS.
- Initiate JCAT Data Correlation to Vulnerability/Survivability Analysis.
- Initiate Passive Covert Radar Countermeasures.
- Initiate other projects as approved by the principal members and OSD.

T&E Independent Activities:

- Continue analytical support for the Director’s role as the principal adviser to the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology, and Logistics on operational and live fire test and evaluation and as the principal test and evaluation official within the senior management of the DOD.

- Continue analysis to support promulgation of policies and procedures for the conduct of operational test and evaluation and live fire test and evaluation in the DOD, and analysis relating to the composition of the Major Range and Test Facility Base.
- Continue analysis to support the provision of guidance to, and consultation with, senior DOD officials with respect to operational and live fire test and evaluation resources and facilities in the Department.
- Continue analysis to support review and recommendations to the Secretary of Defense on all budgetary and financial matters relating to operational and live fire test and evaluation, including operational test facilities and equipment.
- Continue analysis to support statutory annual reporting to the Secretary of Defense and the Congress on operational test and evaluation, including comments and recommendations on resources and facilities available for operational and live fire test and evaluation and levels of funding made available for operational and live fire test and evaluation activities.
- Continue analysis to support compliance with requests from Congress for information relating to operational test and evaluation in the DOD.
- Continue analysis to develop technical alternatives on issues affecting T&E resources and infrastructure.
- Continue analyses to support the Director's operational and live fire test resource requirements for the statutory biennial strategic plan reflecting the needs of the Department with respect to T&E facilities and resources.
- Administrative Support:
    - Procure administrative support to carry out oversight of DOT&E programs.
- Accounting and Financial Management Support:
    - Provide accounting and financial management support to the DOT&E.

FY 2007 Plans:

- Please see Operational Test Activities and Analyses, Program Element 0605814OTE

B. (U) PROGRAM CHANGE SUMMARY

($ in Millions)	FY 2005	FY 2006	FY 2007*
FY 2006 President's Budget	107.618	114.190	
FY 2007 President's Budget	107.618	112.199	
Total Adjustments			
Congressional program reductions		1.991	
Congressional rescissions			
Congressional increases			
Fiscal Guidance Adjustments			
Inflation Adjustment			
Reprogramming			

C. (U) OTHER PROGRAM FUNDING: NA

D. (U) PERFORMANCE METRICS

Percentage of required products, such as test planning documents, munitions effectiveness manuals, tactics-techniques-procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time.

Please see PE 0605814OTE for Performance Metrics discussion for FY 2005 actuals and discussion.