RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2)				February 2005				
RDT&E, DEFENSE-WIDE (0400) BUDGET ACTIVITY SIX				CENTRAL TEST AND EVALUATION INVESTMENT PROGRAM (CTEIP) PROGRAM ELEMENT (PE) 0604940D8Z				
$'s in Millions	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
PE 0604940D	0.000*	0.000*	128.759	130.230	137.908	137.320	139.865	143.015

***Language in the National Defense Authorization Act of 2003 directed the establishment of the Defense Test Resource Management Center (DTRMC). The Act also requires the DTRMC to administer the Central Test and Evaluation Investment Program (CTEIP) and the Test and Evaluation/Science and Technology (T&E/S&T) program effective Fiscal Year 2006.**

Beginning with FY 2006, program elements 0603941D8Z (T&E/S&T) and 0604940D8Z (CTEIP) are transferred from the Operational Test and Evaluation, Defense (OT&E, D) appropriation (0460) to the Defense-wide RDT&E (0400) appropriation. FYs 2004 and 2005 Accomplishments are in the OT&E appropriation.

A. (U) MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION

Since its inception in FY 1990, this program element has been, and continues to be, used to fund the development of critically needed, high priority Test and Evaluation (T&E) capabilities for joint/multi-Service requirements. The Central Test and Evaluation Investment Program (CTEIP) uses a corporate investment approach to combine Service and Defense Agency T&E needs, maximize opportunities for joint efforts, and avoid unwarranted duplication of test capabilities. CTEIP focuses investments on projects that will have high productivity returns on investment. Projects under the CTEIP Program Element (PE) support two basic tasks: investments to improve the test capabilities base (Joint Improvement and Modernization (JIM) projects) and development of near-term solutions to test capability shortfalls in support of an ongoing operational test program (Resource Enhancement Project (REP)).

The JIM funds critically needed T&E investments in the major functional areas of test mission command, control, communications and instrumentation; electronic warfare systems; threat and computational simulation test and evaluation; space systems T&E; weapons effects test capabilities; targets; and physical and environmental test capabilities. The investments include

both the demonstrations of advanced technologies needed to test increasingly complex and sophisticated weapon systems and the transition of these technologies into test capabilities. Examples of project subject matter include: automated data collection, processing, display, and archiving; smart munitions testing; modeling and simulation (M&S); advanced electronic combat systems; low-observable technologies and signature measurements; targets and target control; time-space-position-information; end-game measurement; testing of advanced materials application; test design; and advanced sensors and space systems. CTEIP continues as the focal point for fostering common architectures throughout the test and training communities to enhance the sharing of resources and links between test and training ranges. CTEIP has provided special focus to institutionalize the use of M&S as a practical test tool; to link ranges through internetting to enhance inter-range and inter-Service cooperation and resource sharing; and, to ensure development and acquisition of common instrumentation necessary for a more efficient test infrastructure. Analyses of alternative solutions are conducted for each investment project to validate T&E requirements, to define integrated support systems, and to determine overall cost effectiveness of the proposed test investments. The use of Department of Defense (DoD)-wide criteria for requirement validation, prioritization, and risk assessment ensures an effective test resource investment program.

The REP funds development of near-term solutions for critical ongoing operational tests supporting decisions on major, high priority defense acquisition programs. These unanticipated operational test (OT) capability requirements arise from several sources such as a new threat system identified during OT planning, acquisition of foreign military assets that are critical in determining weapon system operational effectiveness, short timelines between system design maturity and scheduled OT, and emerging technologies and test requirements resulting from operational concept changes mandated by Congress or DOT&E, or system-of-systems testing. Funding these activities under the CTEIP provides the opportunity to coordinate and integrate these near-term test requirements with the total DoD test and evaluation investment planning, and ensures their availability and legacy for other programs that may have similar testing requirements. This PE also provides funds to perform travel to carry out oversight of the CTEIP program.

This Research Category 6.4 PE supports the development and application of proven technologies to provide major test and evaluation capabilities required to meet DoD component weapon system test requirements.

Program Accomplishments and Plans:

FY 2004 Accomplishments: See OT&E,D (0460) appropriation.

FY 2005 Accomplishments: See OT&E,D (0460) appropriation.

FY 2006 Plans:

JIM Projects:

- Complete the Land and Sea Vulnerability Test Capability project to provide an instrumented land-sea interface test capability at the Aberdeen Test Center.
- Complete the development and demonstration of time-space-position information (TSPI), flight termination / safe and arm (FTSA), and telemetry functions on advanced missile platforms under the Joint Advanced Missile Instrumentation project.
- Complete the Infrared Sensor Stimulator product improvement and continue development the Advanced Radar Environment Stimulator, under the Joint Installed Systems Test Facility Product Improvements project, to provide improved installed systems capabilities needed to support next generation aircraft testing.
- Complete systems development for the Joint Mobile Infrared Countermeasures Test Suite project to provide infrared spectrum test instrumentation for open air ranges.
- Complete concept development and initiate systems development for the Integrated Network Enhanced Telemetry project to develop a network-enhanced telemetry capability for T&E ranges and facilities.
- Complete validation of flight test procedures and unmanned aerial vehicle (UAV) operations in the U.S. National Airspace alongside manned aircraft, under the UAV Systems and Operations Validation Facility Program.
- Continue systems development of the Contamination Avoidance Detector Test Suite project to provide test methodology, instrumentation, and test fixtures required to test and evaluate current and developmental chemical/biological (CB) detector systems over the entire range of expected use conditions.
- Continue systems development for improved test and evaluation capabilities for directed energy weapons.
- Continue systems development of the Joint C4ISR project to develop a capability to test increasingly complex multi-discipline fusion concepts.
- Continue systems development of the Soft Impact Location Capability project to provide the necessary instrumentation, signal processing, communication, and data processing capabilities to detect and locate the point and angle of impact of projectile and missile weapons within an 800m by 800m impact area.
- Continue systems development of the Enhanced Flight Termination System project to develop a UHF digital flight termination system for DoD unmanned flight vehicles.
- Continue systems development of the Advanced Instrumentation Data & Control System project to develop state-of-the-art instrumentation and control systems to meet DoD T&E requirements for propulsion systems, aerodynamic systems and space systems.
- Continue systems development of the Enhanced Range Applications Project to provide a state-of-the-art Airborne

Range Data System that supports next generation data collection requirements.

- Continue the Test and Training Enabling Architecture (TENA) Software Development Activity project to develop software enhancements and integration tools.
- Continue threat system simulator development efforts under the Threat System Simulator Development project to improve integration, reduce potential duplication in threat and target development, and ensure that accurate, cost-effective representations of threat systems are available to support testing.
- Continue the Tri-Service and CTEIP support projects.
- Initiate systems development for the Hypersonic Propulsion Test Capability project to provide a variable Mach number test capability at the Arnold Engineering Development Center.
- Initiate and complete concept development and initiate systems development for a project to provide a deployable capability to test availability, confidentiality, and integrity of information technology systems.
- Initiate concept development for an interactive electronic attack radio frequency capability to test electronic warfare and avionics systems against reactive air defenses in a secure, protected ground-based environment.
- Initiate concept development for a project to provide an advanced communications environment simulator that can replicate the networked environment to enable Faithful Timeslot Messaging and certification and interoperability.

Resource Enhancement Project:

- Complete the Probability of Raid Annihilation (PRA) Testbed Common Threat and Environment Capability subproject to develop a common set of threat and natural environment representations for consistent assessment of ship self defense systems across ship classes.
- Complete the Torpedo Proximity Scoring System subproject to develop a reliable and flexible prototype instrumentation system to support torpedo defensive system testing and evaluation requirements.
- Complete the Shootable Remote Threat Ground Targets subproject to provide six low cost ground targets operating in a tactical formation and an integrated portable autopilot and remote control system.
- Continue the Advanced Capability Mobile Flight Simulator subproject to to provide more realistic Tactical Ballistic Missile (TBM) threat scenario simulations.
- Initiate development of instrumented facilities to evaluate our next generation of sensors, weapons, platforms, and C4ISR systems in a realistic urban environment.
- Initiate development of improved test capabilities to fully test and evaluate current multi-spectral and hyperspectral seeker and sensor system technologies.

- Initiate development of non-intrusive C4ISR network performance monitoring and data collection instrumentation to support net-centric warfare systems.
- Initiate developments to address near term OT capability shortfalls in range instrumentation, sensors, and time-space-position information systems.
- Initiate developments to address near term OT capability shortfalls in range-space wireless communications, telemetry, and range control systems.

FY 2007 Plans:

JIM Projects:

- Complete systems development of the Contamination Avoidance Detector Test Suite project to provide test methodology, instrumentation, and test fixtures required to test and evaluate current and developmental CB detector systems over the entire range of expected use conditions.
- Complete development the Advanced Radar Environment Stimulator, under the Joint Installed Systems Test Facility Product Improvements project, to provide improved installed systems capabilities needed to support next generation aircraft testing.
- Complete systems development of the Soft Impact Location Capability project to provide the necessary instrumentation, signal processing, communication, and data processing capabilities to detect and locate the point and angle of impact of projectile and missile weapons within an 800m by 800m impact area.
- Complete systems development of the Enhanced Flight Termination System project to develop a UHF digital flight termination system for DoD unmanned flight vehicles.
- Complete systems development of the Advanced Instrumentation Data & Control System project to develop state-of-the-art instrumentation and control systems to meet DoD T&E requirements for propulsion systems, aerodynamic systems and space systems.
- Complete systems development of the Enhanced Range Applications Project to provide a state-of-the-art Airborne Range Data System that supports next generation data collection requirements.
- Complete concept development and initiate systems development for the Interactive Electronic Attack project to provide an interactive electronic attack radio frequency capability to test electronic warfare and avionics systems against reactive air defenses in a secure, protected ground-based environment.
- Complete concept development and initiate systems development for the Advanced Communications Environment project to provide a Link 16 simulator that can replicate the networked environment to enable Faithful Timeslot Messaging and certification and interoperability.
- Continue systems development for improved test and evaluation capabilities for directed energy weapons.

- Continue systems development of the Joint C4ISR project to develop a capability to test increasingly complex multi-discipline fusion concepts.
- Continue systems development for the Integrated Network Enhanced Telemetry project to develop a network-enhanced telemetry capability for T&E ranges and facilities.
- Continue the Test and Training Enabling Architecture (TENA) Software Development Activity project to develop software enhancements and integration tools.
- Continue threat system simulator development efforts under the Threat System Simulator Development project to improve integration, reduce potential duplication in threat and target development, and ensure that accurate, cost-effective representations of threat systems are available to support testing.
- Continue the Tri-Service and CTEIP support projects.
- Continue systems development for the Hypersonic Propulsion Test Capability project to provide a variable Mach number test capability at the Arnold Engineering Development Center.
- Continue systems development for a project to provide a deployable capability to test availability, confidentiality, and integrity of information technology systems.
- Continue concept development for an interactive electronic attack radio frequency capability to test electronic warfare and avionics systems against reactive air defenses in a secure, protected ground-based environment.
- Continue concept development for a project to provide an advanced communications environment simulator that can replicate the networked environment to enable Faithful Timeslot Messaging and certification and interoperability.
- Initiate concept development for a project to provide advanced range control capabilities.

Resource Enhancement Project:

- Complete the Advanced Capability Mobile Flight Simulator subproject to to provide more realistic Tactical Ballistic Missile (TBM) threat scenario simulations.
- Complete development of instrumented facilities to evaluate our next generation of sensors, weapons, platforms, and C4ISR systems in a realistic urban environment.
- Complete development of improved test capabilities to fully test and evaluate current multi-spectral and hyperspectral seeker and sensor system technologies.
- Complete development of non-intrusive C4ISR network performance monitoring and data collection instrumentation to support net-centric warfare systems.
- Complete developments to address near term OT capability shortfalls in range instrumentation, sensors, and time-space-position information systems.
- Complete developments to address near term OT capability shortfalls in range-space wireless communications, telemetry, and range control systems.

- Initiate developments to address near term OT capability shortfalls in range interoperability and knowledge management.
- Initiate developments to address near term OT capability shortfalls in realistic test environments, to include open air test environments, tunnels, and chambers.
- Initiate developments to address near term OT capability shortfalls in the realistic representation of enemy threats and targets.
- Initiate developments to address near term OT capability shortfalls in installed systems and hardware-in-the-loop T&E facilities.

B. (U) PROGRAM CHANGE SUMMARY

*Language in the National Defense Authorization Act of 2003 directed the establishment of the Defense Test Resource Management Center (DTRMC). The Act also requires the DTRMC to administer the Central Test and Evaluation Investment Program (CTEIP) effective Fiscal Year 2006. Beginning with FY 2006, program element 0604940D8Z (CTEIP) is transferred from the Operational Test and Evaluation, Defense appropriation (0460) to the Defense-wide RDT&E (0400) appropriation.

	FY 2004	FY 2005	FY 2006	FY 2007
Previous President's Budget:	0.000*	0.000*	0.000*	0.000*
Current FY 2006 President's Budget Submission:	0.000*	0.000*	128.759	130.230
Total Adjustments			+128.759	+130.230
Congressional Program Reductions				
Congressional Rescissions				
Congressional Increases				
Reprogramming			+128.759	+130.230

C. (U) OTHER PROGRAM FUNDING NA

D. (U) ACQUISITION STRATEGY NA

E. (U) PERFORMANCE METRICS

Percentage of CTEIP projects that were developed and delivered to the DoD test community over the past five years.