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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Office of Secretary Of Defense **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0604940D8Z: <i>Central Test and Evaluation Investment Program (CTEIP)</i>
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COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	157.971	156.297	144.109	-	144.109	140.097	141.038	139.435	141.958	Continuing	Continuing
940: <i>Central Test and Evaluation Investment Program (CTEIP)</i>	157.971	156.297	144.109	-	144.109	140.097	141.038	139.435	141.958	Continuing	Continuing
Quantity of RDT&E Articles											

A. Mission Description and Budget Item Justification

Since its inception in FY 1990, this program element has been 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, Defense, and other government agencies 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 ongoing operational test programs (Resource Enhancement Project (REP)).

The JIM funds critically needed T&E investments in the major functional areas of: air combat; armament and munitions; Command, Control Communication, Computer and Intelligence (C4I) and networks; common range instrumentation; electronic combat; land combat; sea combat; space combat; target systems; and test environments. Examples of project subject matter include: highly accurate time-space-position information, network enhanced telemetry, miniaturized flight safety systems, realistic urban test environments, ground testing for hypersonic systems and satellites, and end-to-end testing of infrared countermeasure 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 modeling and simulation (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 Director, Operational Test & Evaluation (DOT&E),

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BA 6: <i>RDT&E Management Support</i>	

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 Research Category 6.4 PE includes special studies, analyses, and strategic planning related to test capabilities and infrastructure, and supports the development and application of proven technologies to provide major test and evaluation capabilities required to meet DoD component weapon system test requirements.

B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	162.286	140.231	151.521	-	151.521
Current President's Budget	157.971	156.297	144.109	-	144.109
Total Adjustments	-4.315	16.066	-7.412	-	-7.412
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	20.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-2.837	-2.864			
• Other Program Adjustments	-1.478	-1.070	-9.102	-	-9.102
• Economic Assumption Adjustments	-	-	1.690	-	1.690

C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
Title: Central Test and Evaluation Investment Program	157.971	156.297	144.109
FY 2011 Accomplishments:			
JIM Projects:			
- Completed concept development and preliminary design of the Hypersonic Propulsion Test Capability project to provide a variable Mach number aerodynamic propulsion test capability at the Arnold Engineering Development Center.			
- Continued development of the Advanced Radar Environment Simulator, under the Joint Installed Systems Test Facility Product Improvements project, to provide improved installed systems capabilities needed to support next generation aircraft testing.			
- Continued requirements development and planning for the Joint Unmanned Aerial Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments.			
- Continued requirements development and planning of a Joint Urban Test Capability to provide urban environment test capabilities.			
- Continued systems development of the Joint Command, Control Communication, Computer, Intelligence, Surveillance, and Reconnaissance (C4ISR) Interoperability Test and Evaluation Capability project to develop a capability to test increasingly complex multi-discipline data fusion concepts.			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Continued systems development for the Objective Helicopter Icing Spray System project to provide an enhanced capability to perform in-flight icing and rain testing for low-speed air vehicles. - Continued system development for the Space Threat Assessment Testbed project to provide a capability to conduct subsystem and system level combined natural and man-made space environmental effects ground testing of critical space assets. - Continued systems development for the Common Range Integrated Instrumentation System project to develop a common range instrumentation system to address next generation range data requirements. - Continued the Test and Training Enabling Architecture Software Development Activity to promote integrated testing and simulation-based acquisition through the use of a logical range consisting of distributed live, virtual, and constructive elements tied together by a common architecture. - Continued threat system simulator development efforts 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. - Continued requirements development and planning for the Multi-Level Secure (MLS) Joint/Coalition Network Environment project to develop a standardized, DoD multi-level secure and cross-domain data management T&E network architecture. - Continued concept development and preliminary design of the Subminiature Flight Safety System project to provide a subminiature, low-cost flight termination system with time-space-position information and data link capabilities. - Continued concept development and preliminary design for the Integrated Network Enhanced Telemetry project Block I capability to develop a network-enhanced aeronautical telemetry capability for T&E ranges and facilities. - Initiated system development for the Missile Warning System and Flares segment of the Joint Distributed Infrared Countermeasures (IRCM) Ground Test System project to provide an end-to-end ground test system enabling complete testing of IRCM systems. - Initiated requirements development and planning for the Next Generation Electronic Warfare Environment Generator project to provide electronic warfare simulation capabilities for testing future Electronic Attack and Electronic Support Measures systems. - Initiated requirements development and planning for the Advanced Range Tracking and Imaging System project to provide an integrated next generation suite of optical tracking mounts needed to increase performance, reduce costs, and effectively deliver secure reliable optical throughput. - Initiated an analysis of the benefits of developing test capabilities for Autonomous Systems. - Initiated an analysis of tri-service signals library needs to support development of a controlled density open air environment for testing of C4ISR systems. <p>Resource Enhancement Project:</p> <ul style="list-style-type: none"> - Completed integration and testing for the Battle Command Network Integration and Simulation project. - Completed acceptance testing for the 25K Transportable Target Launcher project. - Completed critical design and initiated long lead parts purchases for the Multi-Spectral Sea and Land Target Simulator project. 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Completed development of the Operational Command and Control Instrumentation System project. - Completed Verification and Validation for the Submarine Launched Countermeasure Emulator project. - Initiated the development of the MILSATCOM Atmospheric Scintillation Simulator project to simulate and assess nuclear scintillation effects on the Advanced Extremely High Frequency System during operational testing. - Continued the development of the Lightweight Alternative Power Source project. - Continued the development of the Ground Mounted Seeker Simulator project. - Continued the development of the Distributed Timing Instrumentation Environment project. - Initiated Precision Target Signatures-Reflective Performance Mover (PTS-RPM) to develop low cost, radar cross section representative, movable targets in support of Gray Eagle Unmanned Aerial System operational testing. - Initiated Hostile Fire Indicator Site (HFIS) to enhance existing Hostile Fire Indicator test site with key upgrades to fully facilitate HFI testing of warning systems. <p>FY 2012 Plans:</p> <p>JIM Projects:</p> <ul style="list-style-type: none"> - Complete requirements development and planning, and initiate concept development and preliminary design of a Joint Urban Test Capability to provide urban environment test capabilities. - Complete requirements, development, and planning; and initiate concept development and preliminary design for the Multi-Level Secure (MLS) Joint/Coalition Network Environment project to develop a standardized, DoD multi-level secure and cross-domain data management T&E network architecture. - Complete requirements development and planning, and initiate concept development and preliminary design of the Joint Unmanned Aerial Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments. - Complete systems development of the Advanced Radar Environment Simulator, under the Joint Installed Systems Test Facility Product Improvements project, to provide improved installed systems capabilities needed to support next generation aircraft testing. - Complete requirements development and planning and initiate concept development and preliminary design for the Next Generation Electronic Warfare Environment Generator project to provide electronic warfare simulation capabilities for testing future Electronic Attack and Electronic Support Measures systems. - Complete concept development and preliminary design and initiate systems development of the Subminiature Flight Safety System project to provide a subminiature, low-cost flight termination system with time-space-position information and data link capabilities. - Complete concept development and preliminary design and initiate system design for the Integrated Network Enhanced Telemetry project Block I capability to develop a network-enhanced aeronautical telemetry capability for T&E ranges and facilities. - Complete an analysis of the benefits of developing test capabilities for Autonomous Systems. 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Complete an analysis of tri-service signals library needs to support development of a controlled density open air environment for testing of C4ISR systems. - Continue system development for the Missile Warning System and Flares segment of the Joint Distributed Infrared Countermeasures (IRCM) Ground Test System project to provide an end-to-end ground test system enabling complete testing of IRCM systems. - Continue systems development of the Joint C4ISR Interoperability Test and Evaluation Capability project to develop a capability to test increasingly complex multi-discipline data fusion concepts. Continue development of Spiral 3 capability by integrating the principal protocols of the Joint Intelligence Networks and the Net Ready Key Performance Parameter (KPP). - Continue system development for the Objective Helicopter Icing Spray System project to provide an enhanced capability to perform in-flight icing and rain testing for low-speed air vehicles. - Continue system development for the Space Threat Assessment Testbed project to provide a capability to conduct subsystem and system level combined natural and man-made space environmental effects ground testing of critical space assets. - Continue systems development for the Common Range Integrated Instrumentation System project to develop a common range instrumentation system to address next generation range data requirements. - Continue the Test and Training Enabling Architecture Software Development Activity to promote integrated testing and simulation-based acquisition through the use of a logical range consisting of distributed live, virtual, and constructive elements tied together by a common architecture. - Continue threat system simulator development efforts 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 requirements development and planning for the Advanced Range Tracking and Imaging System project to provide an integrated next generation suite of optical tracking mounts needed to increase performance, reduce costs, and effectively deliver secure reliable optical throughput. - Initiate the C-130 Based Telemetry Instrumentation System project to provide expanded capability and capacity telemetry support for aircraft and missile defense testing in inter-range and broad ocean area test scenarios. <p>Resource Enhancement Project:</p> <ul style="list-style-type: none"> - Complete system fabrication and begin testing of the Multi-Spectral Sea and Land Target Simulator project. - Complete the development of the Lightweight Alternative Power Source project. - Complete the development of the Ground Mounted Seeker Simulator project. - Complete the development of the Distributed Timing Instrumentation Environment project. - Complete design and development, and begin Defense Threat Reduction Activity certification testing, of the MILSATCOM Atmospheric Scintillation Simulator project. - Continue development of Precision Target Signatures-Reflective Performance Mover (PTS-RPM) to develop low cost, radar cross section representative, movable targets 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<p>- Continue development of Hostile Fire Indicator Site (HFIS) to enhance existing Hostile Fire Indicator test site with key upgrades to fully facilitate HFI testing of warning systems</p> <p>- Initiate development of Mobile Flight Mission Simulator (mFMS) Advanced Electronic Attack (AEA) to provide realistic electronic attack capabilities into PATRIOT Flight Mission Simulators.</p> <p>FY 2013 Plans: JIM Projects:</p> <ul style="list-style-type: none"> - Complete concept development and preliminary design and initiate systems development of a Joint Urban Test Capability to provide urban environment test capabilities. - Complete concept development and preliminary design and initiate systems development for the Multi-Level Secure (MLS) Joint/Coalition Network Environment project to develop a standardized, DoD multi-level secure and cross-domain data management T&E network architecture. - Complete systems development of the Joint C4ISR Interoperability Test and Evaluation Capability project to develop a capability to test increasingly complex multi-discipline data fusion concepts. Complete development of Spiral 3 capability by integrating the principal protocols of the Joint Intelligence Networks and the Net Ready Key Performance Parameter (KPP). - Complete system development for the Space Threat Assessment Testbed project to provide a capability to conduct subsystem and system level combined natural and man-made space environmental effects ground testing of critical space assets. - Complete concept development and preliminary design and initiate systems development of the Joint Unmanned Aerial Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments. - Complete concept development and preliminary design and initiate systems development for the Next Generation Electronic Warfare Environment Generator project to provide electronic warfare simulation capabilities for testing future Electronic Attack and Electronic Support Measures systems. - Complete systems development of the Subminiature Flight Safety System project to provide a subminiature, low-cost flight termination system with time-space-position information and data link capabilities. - Continue system development for the Objective Helicopter Icing Spray System project to provide an enhanced capability to perform in-flight icing and rain testing for low-speed air vehicles. - Continue systems development for the Common Range Integrated Instrumentation System project to develop a common range instrumentation system to address next generation range data requirements. - Continue systems development for the Integrated Network Enhanced Telemetry project Block I capability to develop a network-enhanced aeronautical telemetry capability for T&E ranges and facilities. - Continue the Test and Training Enabling Architecture Software Development Activity to promote integrated testing and simulation-based acquisition through the use of a logical range consisting of distributed live, virtual, and constructive elements tied together by a common architecture. 			

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C. Accomplishments/Planned Programs (\$ in Millions)	FY 2011	FY 2012	FY 2013
<ul style="list-style-type: none"> - Continue threat system simulator development efforts 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 Advanced Range Tracking and Imaging System project to provide an integrated next generation suite of optical tracking mounts needed to increase performance, reduce costs, and effectively deliver secure reliable optical throughput. - Continue the C-130 Based Telemetry Instrumentation System project to provide expanded capability and capacity telemetry support for aircraft and missile defense testing in inter-range and broad ocean area test scenarios. - Continue system development for the Missile Warning System and Flares segment of the Joint Distributed Infrared Countermeasures (IRCM) Ground Test System project to provide an end-to-end ground test system enabling complete testing of IRCM systems. - Initiate the Synthetic Battlefield Emitter Systems project to provide a controlled density open air environment for testing of C4ISR systems. <p>Resource Enhancement Project:</p> <ul style="list-style-type: none"> - Complete development of Precision Target Signatures-Reflective Performance Mover (PTS-RPM) to develop low cost, radar cross section representative, movable targets. - Complete development of Hostile Fire Indicator Site (HFIS) to enhance existing Hostile Fire Indicator test site with key upgrades to fully facilitate HFI testing of warning systems. - Continue development of Mobile Flight Mission Simulator (mFMS) Advanced Electronic Attack (AEA) to provide realistic electronic attack capabilities into PATRIOT Flight Mission Simulators. - 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 hardware simulators to test missile warning systems of new generation electronic warfare (EW) suites in a dynamic environment. - Initiate the development of non-intrusive instrumentation to address near term OT capability shortfalls to evaluate advanced sensor system performance in harsh environments. 			
Accomplishments/Planned Programs Subtotals	157.971	156.297	144.109

D. Other Program Funding Summary (\$ in Millions)

N/A

E. Acquisition Strategy

N/A

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R-1 ITEM NOMENCLATURE
PE 0604940D8Z: *Central Test and Evaluation Investment Program (CTEIP)*

F. Performance Metrics

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