Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Office of Secretary Of Defense											Date: March 2014	
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*					R-1 Program Element (Number/Name) PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*							
COST ($ in Millions)	**Prior Years**	**FY 2013**	**FY 2014**	**FY 2015 Base**	**FY 2015 OCO #**	**FY 2015 Total**	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**Cost To Complete**	**Total Cost**
Total Program Element	156.249	177.520	179.607	254.503	-	254.503	245.197	205.496	168.547	177.323	Continuing	Continuing
940: *Central Test and Evaluation Investment Program (CTEIP)*	156.249	177.520	179.607	254.503	-	254.503	245.197	205.496	168.547	177.323	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

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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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	144.109	240.213	256.141	-	256.141
Current President's Budget	177.520	179.607	254.503	-	254.503
Total Adjustments	33.411	-60.606	-1.638	-	-1.638
• Congressional General Reductions	-	-0.106			
• Congressional Directed Reductions	-12.774	-60.500			
• Congressional Rescissions	-	-			
• Congressional Adds	12.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	36.939	-			
• SBIR/STTR Transfer	-2.754	-			
• FY 2015 Adjustment	-	-	-1.638	-	-1.638

Change Summary Explanation

- Strategic efficiency reductions in management headquarters funding and staffing for better alignment and to provide support to a smaller military force.

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
Title: Central Test and Evaluation Investment Program	177.520	179.607	254.503
FY 2013 Accomplishments: JIM Projects: - Completed 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. - Completed 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. - Completed 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.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z *I Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Completed requirements development and planning and initiated 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. - Completed concept development and preliminary design and initiated systems development for the Next Generation Electronic Warfare Environment Generator Build B project to provide electronic warfare simulation capabilities for testing future Electronic Attack and Electronic Support Measures systems. - Completed requirements development and planning and initiated concept development and preliminary design 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. - 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. - Continued concept development and preliminary design for the Joint Urban Test Capability project to provide urban environment test capabilities. - Continued systems development of the Joint Unmanned Aircraft Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments. - Continued system development for the Next Generation Electronic Warfare Environment Generator Build A project to provide a multiple jammer beam characterization system for dynamic stimulation and measurement of multiple jamming and radar signals. - Continued 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. - 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 threat system simulator development efforts to improve integration, reduce potential duplication, and ensure that accurate, cost-effective representations of threat systems are available to support testing. - Continued 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. - Continued the Next Generation Range Control and Data Distribution project to enhance and modernize range control and data distribution systems at the Pacific Missile Range Facility (PMRF). - Continued concept development and preliminary design for the Subminiature Flight Safety System project to provide a subminiature, low-cost flight termination system with time-space-position information and data link capabilities. - Initiated the Synthetic Battlefield Emitter Systems project to provide a controlled density open air environment for testing of C4ISR systems.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Initiated the Electronic Warfare Test Resource Enhancement Project to develop improved electronic warfare test capabilities for fielding at Installed Systems Test Facilities, threat simulation facilities, and open air test ranges to address critical shortfalls in developmental and operational testing of F-35 and other high performance aircraft against advanced threats. Resource Enhancement Project: Completed development of Precision Target Signatures-Reflective Performance Mover (PTS-RPM) to develop low cost, radar cross section representative, movable targets. - Completed delivery of the MILSATCOM Atmospheric Scintillation Simulator project. - Completed delivery of the Threat Model Assessment Program of Operational Test and Evaluation project. - Continued delivery of the J-31 Radar Missile Gun System project. - Continued development of the Multispectral Sea and Land Target Simulator (MSALTS) project. - Continued development of Hostile Fire Indicator Site (HFIS) to enhance existing Hostile Fire Indicator (HFI) test site with key upgrades to fully facilitate HFI testing of warning systems. - Continued development of C2 and Urban Background Environment Simulator (CUBES) to incorporate modern signal processer advances for Installed System Test Facility communications jamming purposes. - Continued development of the Ground Mounted Seeker Simulator project to provide additional missile seekers to the Missile on the Mountain facility. - Continued development of Mobile Flight Mission Simulator (mFMS) Advanced Electronic Attack (AEA) to provide realistic electronic attack capabilities into PATRIOT Flight Mission Simulators. - Initiated and completed development of Direct Injection Plate System (DIPS) to provide Installed System Test Facility with direct RF injection plates for F-35 variants. - Initiated development of DIADS Weapons Control (DWC) to develop new Integrated Air Defense (IADS) weapons control algorithms in the Digital IADS (DIADS) used in the F-35 Virtual Simulator (VSIM). - Initiated development of Torpedo Operational Testing Using Modeling and Simulation (TOTUMS) to enhance torpedo OT&E by upgrading an hardware in the loop (HITL) simulator and environment simulator for high-fidelity, OT-ready realism. - Initiated development of Boosted Zombie Target (BZT) to develop multi-stage, economical targets for PAC-3 by integrating a GFE booster to blue "Zombie" maneuvering target. - Initiated development of the Joint Standard Instrumentation Suite (JSIS) to measure and collect signature, time-space-position information (TSPI), and related data of threat missile and hostile fire munitions (e.g., small arms and rocket-propelled grenade (RPG)) firings to support evaluation of the Joint Allied Threat Awareness System. - Initiated the Automated Test Case Generator Web Service (ATC-GEN WS) to provide Joint Interoperability Test Command (JITC) with the capability to develop Ballistic Missile Defense System (BMDS) and Mode 5 IFF MIL-STD-6016E compliance test cases and an automated test tool on a test network.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Terminated development of Force on Force Real Time Casualty Assessment Test Instrumentation II (FOF-TI II), intended to provide force-on-force evaluations of the Lightweight Armored Vehicle Anti-Tank Modernization program.			
FY 2014 Plans: JIM Projects: - Complete system development for the Next Generation Electronic Warfare Environment Generator Build A project to provide a multiple jammer beam characterization system for dynamic stimulation and measurement of multiple jamming and radar signals. - Complete 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. - Complete concept development and preliminary design and initiate system development for the Joint Urban Test Capability to provide urban environment test capabilities. - Continue concept development and preliminary design 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. - Continue 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. - Continue systems development for the Joint Unmanned Aircraft Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments. - Continue systems development for the Next Generation Electronic Warfare Environment Generator Build B 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 for 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 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 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 threat system simulator development efforts to improve integration, reduce potential duplication, and ensure that accurate, cost-effective representations of threat systems are available to support testing. - Continue the Synthetic Battlefield Emitter Systems project to provide a controlled density open air environment for testing of C4ISR systems.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Continue the Next Generation Range Control and Data Distribution project to enhance and modernize range control and data distribution systems at the Pacific Missile Range Facility (PMRF). - Continue the Electronic Warfare Test Resource Enhancement Project to develop improved electronic warfare test capabilities for fielding at Installed Systems Test Facilities, threat simulation facilities, and open air test ranges to address critical shortfalls in developmental and operational testing of F-35 and other high performance aircraft against advanced threats. - Initiate the Vertical Electromagnetic Pulse (EMP) and High Power Microwave (HPM) Test Sources project to provide vertical high-altitude EMP and HPM external electromagnetic environments for testing in accordance with applicable Military Standards. - Initiate the Network Centric Weapon (NCW) T&E Environment project to provide an enhanced capability to test and evaluate NCW in a distributed simulation environment. - Initiate the Cyber Test Analysis and Simulation Environment project to enhance current Information Assurance / Cyber testing and analysis capabilities and modeling and simulations tools for testing against increasingly robust Cyber threats. Resource Enhancement Project: - 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. - Complete development of Mobile Flight Mission Simulator (mFMS) Advanced Electronic Attack (AEA) to provide realistic electronic attack capabilities into PATRIOT Flight Mission Simulators. - Complete delivery of the J-31 Radar Missile Gun System project. - Complete development of DIADS Weapons Control (DWC) to develop new Integrated Air Defense (IADS) weapons control algorithms in the Digital IADS (DIADS) used in the F-35 Virtual Simulator (VSIM). - Complete development of Torpedo Operational Testing Using Modeling and Simulation (TOTUMS) to enhance torpedo OT&E by upgrading an HITL simulator and environment simulator for high-fidelity, OT-ready realism. - Continue development of C2 and Urban Background Environment Simulator (CUBES) to incorporate modern signal processer advances for Installed System Test Facility communications jamming purposes. - Continue development of Boosted Zombie Target (BZT) to develop multi-stage, economical targets for PAC-3 by integrating a GFE booster to blue "Zombie" maneuvering target. - Continue development of Joint Standard Instrumentation Suite (JSIS) to measure and collect signature, TSPI, and related data of threat missile and hostile fire munitions (e.g., small arms and RPG) firings to support evaluation of the Joint Allied Threat Awareness System. - Continue the Automated Test Case Generator Web Service (ATC-GEN WS) to provide JITC with the capability to develop BMDS and Mode 5 IFF MIL-STD-6016E compliance test cases and an automated test tool on a test network. - Initiate the DIADS Sensor Reactivity Upgrade (SRU) to upgrade DIADS radars with enhanced electronic countermeasures (ECM) response features in support of JSF and F-22 operational testing.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Initiate the Wideband Configurable Control Jammer (WCCJ) Enhancement to develop and integrate an Electronic Support Measures (ESM) subsystem into WCCJ, thus improving its ability to monitor and prioritize signals during Network Integrated Exercise events. ***FY 2015 Plans:*** JIM Projects: - Complete concept development and preliminary design and initiate systems development 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. - Complete concept development and preliminary design and initiate system 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 for the Joint Unmanned Aircraft Systems (UAS) Mission Environment project to develop a capability for testing UAS in simulated system of systems environments. - Complete systems development for Spiral 1 of the Integrated Network Enhanced Telemetry project Block I capability to develop a network-enhanced aeronautical telemetry capability for T&E ranges and facilities. - Complete the Next Generation Range Control and Data Distribution project to enhance and modernize range control and data distribution systems at the Pacific Missile Range Facility (PMRF). - Complete 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 system development for the Joint Urban Test Capability to provide urban environment test capabilities. - Continue systems development for the Next Generation Electronic Warfare Environment Generator Build B project to provide electronic warfare simulation capabilities for testing future Electronic Attack and Electronic Support Measures systems. - Continue 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 threat system simulator development efforts to improve integration, reduce potential duplication, and ensure that accurate, cost-effective representations of threat systems are available to support testing. - Continue the Synthetic Battlefield Emitter Systems project to provide a controlled density open air environment for testing of C4ISR systems. - Continue the Vertical Electromagnetic Pulse (EMP) and High Power Microwave (HPM) Test Sources project to provide vertical high-altitude EMP and HPM external electromagnetic environments for testing in accordance with applicable Military Standards.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide* / BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z / *Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- Continue the Network Centric Weapon (NCW) T&E Environment project to provide an enhanced capability to test and evaluate NCW in a distributed simulation environment. - Continue the Cyber Test Analysis and Simulation Environment project to enhance current Information Assurance / Cyber testing and analysis capabilities and modeling and simulations tools for testing against increasingly robust Cyber threats. - Continue the Electronic Warfare Test Resource Enhancement Project to develop improved electronic warfare test capabilities for fielding at Installed Systems Test Facilities, threat simulation facilities, and open air test ranges to address critical shortfalls in developmental and operational testing of F-35 and other high performance aircraft against advanced threats. - Initiate system development for the Directional Infrared Countermeasures (DIRCM) 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 Aircraft 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. Resource Enhancement Project: - Complete development of C2 and Urban Background Environment Simulator (CUBES) to incorporate modern signal processer advances for Installed System Test Facility communications jamming purposes. - Complete development of Boosted Zombie Target (BZT) to develop multi-stage, economical targets for PAC-3 by integrating a GFE booster to blue "Zombie" maneuvering target. - Complete the DIADS Sensor Reactivity Upgrade (SRU) to upgrade DIADS radars with enhanced ECM response features in support of JSF and F-22 operational testing. - Complete the Wideband Configurable Control Jammer (WCCJ) Enhancement to develop and integrate an Electronic Support Measures (ESM) subsystem into WCCJ, thus improving its ability to monitor and prioritize signals during Network Integrated Exercise events. - Continue development of Joint Standard Instrumentation Suite (JSIS) to measure and collect signature, TSPI, and related data of threat missile and hostile fire munitions (e.g., small arms and RPG) firings to support evaluation of the Joint Allied Threat Awareness System. - Complete the Automated Test Case Generator Web Service (ATC-GEN WS) to provide JITC with the capability to develop BMDS and Mode 5 IFF MIL-STD-6016E compliance test cases and an automated test tool on a test network. - 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.			

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Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 6: *RDT&E Management Support*	**R-1 Program Element (Number/Name)** PE 0604940D8Z *I Central Test and Evaluation Investment Program (CTEIP)*

C. Accomplishments/Planned Programs ($ in Millions)	FY 2013	FY 2014	FY 2015
- 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	177.520	179.607	254.503

D. Other Program Funding Summary ($ in Millions)

N/A

Remarks

E. Acquisition Strategy

N/A

F. Performance Metrics

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