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Exhibit R-2, RDT&E Budget Item Justification: PB 2016 Operational Test and Evaluation, Defense **Date:** February 2015

Appropriation/Budget Activity 0460: <i>Operational Test and Evaluation, Defense I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605814OTE / <i>Operational Test Activities and Analyses</i>
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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
Total Program Element	178.501	121.948	70.346	46.838	-	46.838	47.810	48.864	49.858	49.458	Continuing	Continuing
0605814OTE: OTA&A	178.501	121.948	70.346	46.838	-	46.838	47.810	48.864	49.858	49.458	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The OTA&A programs consist of three activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); and Center for Countermeasures (CCM).

Joint Test and Evaluation projects are test and evaluation activities conducted in a joint military environment that develop process improvements. These multi-Service projects, chartered by the Office of the Secretary of Defense and coordinated with the Joint Staff, appropriate combatant commanders, and the Services, provide non-materiel solutions that improve: joint interoperability of Service systems, technical and operational concepts, joint operational issues, development and validation of joint test methodologies, and test data for validating models, simulations, and test beds. The JT&E projects address relevant joint war fighting issues in a joint test and evaluation environment by developing and providing new tactics, techniques, and procedures to improve joint capabilities and methodologies.

Threat Systems, based on a memorandum of agreement between the Director, Operational Test and Evaluation (DOT&E) and the Defense Intelligence Agency, provides DOT&E support in the areas of threat resource analysis, intelligence support and threat systems investments. Threat Systems provides threat resource analyses on the availability, capabilities and limitations of threat representations (threat simulators, targets, models, U.S. surrogates and foreign materiel) and analysis of test resources used for operational testing to support DOT&E's assessment of the adequacy of testing for those programs designated for oversight by DOT&E and the Office of the Under Secretary of Defense for Acquisition, Technology and Logistics. Threat Systems provides DOT&E assessment officers and other DOT&E activities with program specific threat intelligence support. Threat Systems also funds management, oversight, and development of common-use threat specifications for threat simulators, threat representative targets, and digital threat models used for test and evaluation.

The Center, a Joint Service Countermeasure (CM) T&E Activity, directs, coordinates, supports, and conducts independent countermeasure/counter-countermeasure (CCM) T&E activities of U.S. and foreign weapon systems, subsystems, sensors, and related components. The Center accomplishes this work in support of DOT&E, Deputy Assistant Secretary of Defense (DASD) for Developmental Test and Evaluation (DT&E), weapon system developers, and the Services. The Center's testing and analyses directly supports operational effectiveness and suitability evaluations of CM/CCM systems, such as missile warning and aircraft survivability equipment (ASE), used on rotary-wing and fixed-wing aircraft. The Center develops unique CM/CCM test equipment to support testing in operationally realistic environments. The Center determines effectiveness of precision guided weapon (PGW) systems and subsystems when operating in an environment degraded by CMs. Analysis and recommendations on CM/CCM effectiveness are provided to Service Program Offices, DOT&E, DASD (DT&E), and the Services. The Center also supports Service member exercises, training, and pre-deployment activities with expertise on CM/CCM technology and capabilities.

This Program Element includes funds to obtain Federally Funded Research and Development support and travel funds.

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B. Program Change Summary (\$ in Millions)	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total
Previous President's Budget	62.157	48.013	47.152	-	47.152
Current President's Budget	121.948	70.346	46.838	-	46.838
Total Adjustments	59.791	22.333	-0.314	-	-0.314
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-0.709	-0.667			
• Congressional Rescissions	-	-			
• Congressional Adds	60.500	23.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Inflation/Economic Assumptions	-	-	-0.314	-	-0.314

Congressional Add Details (\$ in Millions, and Includes General Reductions)

Project: 0605814OTE: *OTA&A*

Congressional Add: *Electronic Warfare Test Capability*

Congressional Add: *Joint Test and Evaluation*

Congressional Add: *Threat Resource Analysis*

Congressional Add Subtotals for Project: 0605814OTE

Congressional Add Totals for all Projects

FY 2014	FY 2015
60.500	-
-	18.000
-	5.000
60.500	23.000
60.500	23.000

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COST (\$ in Millions)	Prior Years	FY 2014	FY 2015	FY 2016 Base	FY 2016 OCO	FY 2016 Total	FY 2017	FY 2018	FY 2019	FY 2020	Cost To Complete	Total Cost
0605814OTE: OTA&A	178.501	121.948	70.346	46.838	-	46.838	47.810	48.864	49.858	49.458	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Operational Test Activities and Analyses (OTA&A) programs are continuing efforts that provide management and oversight of test and evaluation functions and expertise to the Department of Defense (DoD). The OTA&A programs consist of three activities: Joint Test and Evaluation (JT&E); Threat Systems (TS); and, the Center for Countermeasures (CCM).

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2014	FY 2015	FY 2016
Title: Operational Test Activities and Analyses	61.448	47.346	46.838
FY 2014 Accomplishments: Joint Test and Evaluation (JT&E)			
In FY 2014, JT&E had two projects close and three projects ongoing from FY 2013. The Joint Deployable Integrated Air and Missile Defense Joint Test closed in June 2014. The test developed, tested and evaluated tactics, techniques, and procedures to enable the joint task force commander to employ integrated deployable air, cruise missile, and theater ballistic missile defense capabilities. The Joint Advanced Capability Employment Joint Test closed in August 2014. The test developed a testable and repeatable methodology for the joint task force commander to employ advanced capabilities to overcome complex targeting challenges.			
Six new feasibility studies were conducted in FY 2014, four of which were selected to conduct joint tests.			
Threat Systems			
In FY 2014, Threat Systems initiated actions to significantly reduce its DOT&E funded investment program due to budget restrictions. These reductions affected DOT&E's ability to make strategic investments to reduce limitations to test due to inadequate threat portrayal. All other Threat Systems support continued.			
Threat Systems continued test planning working group participation and performed technical analyses to identify threat shortfalls; conducted special studies and provided current intelligence support tailored to specific U.S. weapon systems acquisitions; continued managing intelligence "deep dives" to produce intelligence in sufficient detail to develop new threat test assets; operated and maintained the modeling and simulation configuration control board for threat models and simulation used in test			

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B. Accomplishments/Planned Programs (\$ in Millions)

facilities; and, continued the development and implementation of a tri-Service and Allied threat M&S roadmap to ensure infrared countermeasure systems have sufficient threat test assets. Threat Systems proposed, managed and oversaw threat test assets funded by the Test Resource Management Center that support DOT&E-identified threat shortfalls, identified candidate threat systems from the various intelligence agencies for possible development of models for use in test and evaluation. Threat Systems also continued efforts to maintain a standard set of threat performance models.

These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs.

The Center

The Center completed 31 T&E activities and analyzed and reported on more than 30 different systems, with special emphasis on rotary wing survivability, CM/CCM employment, warning and targeting systems, and PGWs. Most programs supported received an independent assessment of our data/findings and test support for their CM/CCM evaluations. Approximately 55% of the Center's efforts were spent on aircraft survivability equipment (ASE) testing; with the majority of these efforts in support of rotary wing aircraft. About 21% of the Center's efforts were spent on PGW, foreign systems, and other types of field testing not related to ASE. Approximately 7% of the Center's efforts were dedicated to training support, with emphasis on CM-based, pre-deployment training for rotary wing units. Fifteen percent of the Center's efforts were spent on internal programs to improve test capabilities and to develop test methodologies for new types of T&E activities. The Center continued to develop multiple test tools for evaluating ASE infrared countermeasure (IRCM) systems and HFI systems. In addition, the Center is improving its electronic warfare capability with the development of the high-power Portable Range Threat Simulator that will provide a more comprehensive integrated ASE T&E environment. Our support was distributed across all the Services, as well as intelligence agencies and research and development activities. About 2% of the Center's efforts consisted of providing subject matter expertise and other support not directly related to scheduled test activities.

The Center provided expertise to many organizations and was actively involved in the following panels: Joint Expendable Countermeasures (JECM) Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), Joint Aircraft Survivability Program (JASP), Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, Joint Countermeasures T&E Working Group (JCMT&E WG), and JCMT&E WG Hostile Fire Indicator (HFI) subgroup lead.

FY 2015 Plans:

Joint Test and Evaluation (JT&E)

FY 2014	FY 2015	FY 2016

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2014	FY 2015	FY 2016
<p>In FY 2015, JT&E has two projects slated to close and an estimated four projects ongoing from FY 2014. Joint Counter Low, Slow, Small Unmanned Aircraft Systems (UAS), scheduled to close in April 2015, developed and tested integrated air and missile defense operator procedures in order to increase an operator's ability to detect, track, and identify low, slow, and small UASs and provide timely notification to the commander of the area air defense. The Unmanned Aircraft Systems Airspace Integration Joint Test, scheduled to close in July 2015, developed and tested DoD UAS procedures to support effective UAS flight operations in the National Airspace System.</p> <p>Four new feasibility studies will be conducted in FY 2015, two of which will be selected to conduct joint tests.</p> <p>Threat Systems</p> <p>In FY 2015, Threat Systems will continue test planning working group participation and perform technical analyses to identify threat shortfalls; conduct special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisitions. Threat Systems will: provide intelligence support to DOT&E staff to address specific questions on threat systems affecting programs on the OSD T&E Oversight list; provide briefings and special intelligence reports when necessary; sustain and manage threat M&S to support test and evaluation by overseeing and coordinating intelligence community developed threat models, performing threat model anomaly resolution resolving differences from live fire testing, integrating threat models into T&E facilities and distributing performance and signature models to T&E users; manage Integrated Technical Evaluation and Analysis of Multiple Sources (ITEAMS) efforts supporting programs on the OSD T&E Oversight List by conducting intelligence "deep dives" to produce intelligence in sufficient detail to develop new threat test assets; initiate new ITEAMS leading to the development of new threat systems for T&E if funding is available; represent DOT&E at foreign material exchanges, inter-agency coordinating groups, and non-proliferation groups to raise awareness of T&E needs for foreign material, coordinate service requirements, and de-conflict and prioritize foreign material requirements for T&E; represent DOT&E at the Intelligence Mission Data Oversight Board responsible for development, production and sharing issues affecting the intelligence data supporting weapons systems acquisition; and Oversee legacy DOT&E investments and continue management and oversight of legacy and new Test Resource Management Center-funded threat system investments.</p> <p>These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs.</p> <p>The Center</p> <p>The Center is scheduled to test, analyze, and report on more than 30 systems and subsystems, with emphasis on rotary wing survivability, CM/CCM employment, and PGWs. Each program supported will receive an independent assessment of our data/</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2014	FY 2015	FY 2016
<p>findings and test support for CM/CCM evaluations. The Center will continue to emphasize support of DOT&E priorities, with a clear focus on Title 10 weapons systems, aircraft survivability and hostile fire initiatives. The Center will continue to conduct ongoing investigations towards determining and filling the gaps in EW and multimode system testing. In addition to these test activities, the Center will continue to provide CM expertise in pre-deployment events and training, as well as CM/CCM-focused tactics, techniques and procedures (TTP) development. The Center will complete the initial development of the MSALTS and JSIS, which will be used in support of testing for both Title 10 programs and ASE urgent operational needs. The Center will complete the development of a new Remote Launch System capable of launching larger diameter missiles. The Center will continue working with the Threat Simulator Working Group (TSWG)-sponsored HSI model. Our support will be distributed across all the Services, as well as intelligence agencies and research and development activities.</p> <p>The Center will provide expertise to many organizations and will continue to be actively involved in the following panels: JECM Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), JASP, Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, JCMT&E WG, and JCMT&E WG HFI subgroup lead.</p> <p>FY 2016 Plans: Joint Test and Evaluation (JT&E)</p> <p>In FY 2016 JT&E has four projects slated to close and an estimated two projects ongoing from FY 2015. The Joint Base Architecture for Secure Industrial Control Systems Joint Test, anticipated to close in December 2015, will assess and refine joint industrial control systems network tactics, techniques, and procedures to better identify, mitigate, and recover from advanced, persistent cyber-attacks. The Joint Tactical Air Picture Joint Test is scheduled to close in December 2015 and will develop tactics, techniques, and procedures to provide an improved tactical air picture that decreases the risk of hostile attacks and fratricide as well as increases the effective use of integrated air and missile defense systems.</p> <p>Four new feasibility studies will be conducted in FY 2016, two of which will be selected to conduct joint tests.</p> <p>Threat Systems</p> <p>In FY 2016, Threat Systems will continue test planning working group participation and perform technical analyses to identify threat shortfalls; conduct special studies and provide current intelligence support tailored to specific U.S. weapon systems acquisitions. Threat Systems will: provide intelligence support to DOT&E staff to address specific questions on threat systems affecting programs on the OSD T&E Oversight list and provide briefings and special intelligence reports when necessary; sustain and manage threat M&S to support test and evaluation by overseeing and coordinating intelligence community developed threat</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2014	FY 2015	FY 2016
<p>models, performing threat model anomaly resolution resolving differences from live fire testing, integrating threat models into T&E facilities and distributing performance and signature models to T&E users; manage Integrated Technical Evaluation and Analysis of Multiple Sources (ITEAMS) efforts supporting programs on the OSD Oversight T&E List by conducting intelligence “deep dives” to produce intelligence in sufficient detail to develop new threat test assets; initiate new ITEAMS leading to the development of new threat systems for T&E if funding is available; represent DOT&E at foreign material exchanges, inter-agency coordinating groups, and non-proliferation groups to raise awareness of T&E needs for foreign material, coordinate service requirements, and de-conflict and prioritize foreign material requirements for T&E; represent DOT&E at the Intelligence Mission Data Oversight Board responsible for development, production and sharing issues affecting the intelligence data supporting weapons systems acquisition; and, oversee legacy DOT&E investments and continue management and oversight of legacy and new Test Resource Management Center-funded threat system investments.</p> <p>These activities help DOT&E carry out its Title 10 responsibilities to assess test adequacy and determine whether testing is realistic and suitable, and promotes common solutions to Service threat representation needs.</p> <p>The Center</p> <p>The Center will test, analyze, and report on more than 30 systems, with special emphasis on aircraft survivability, CM/CCM employment, warning and targeting systems, and PGWs. Each program supported will receive an independent assessment of our data/findings and test support for CM/ CCM evaluations. The Center will continue to emphasize support of the DOT&E enterprise, with a clear focus on Title 10 weapons systems, aircraft survivability and hostile fire initiatives. Furthermore, the Center will continue to provide CM expertise in pre-deployment events and training, as well as CM/CCM-focused TTP development. The Center will continue Improvement and Modernization (I&M) efforts to improve our T&E capabilities. The Center will continue to work with the TSWG-sponsored HSI&G model. Our support will be distributed across all the Services, as well as intelligence agencies and research and development activities.</p> <p>The Center will provide expertise to many organizations and will continue to be actively involved in the following panels: JECM Integrated Product Team, Joint Infrared Countermeasures Multi Sensing Symposia Working Group (MSS IRCM WG), JASP, Foreign Material Exploitation Working Group, Foreign Material Program T&E Subcommittee, JCMT&E WG, and JCMT&E WG HFI subgroup lead.</p>			
Accomplishments/Planned Programs Subtotals	61.448	47.346	46.838

	FY 2014	FY 2015
Congressional Add: Electronic Warfare Test Capability	60.500	-

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	FY 2014	FY 2015
FY 2014 Accomplishments: During FY 2014 the funds were used to procure the CEAFAR2, a suite of radar threat simulator equipment designed to emulate the transmitter characteristics of various foreign radar systems.		
Congressional Add: Joint Test and Evaluation	-	18.000
FY 2015 Plans: Funding will provide for one additional Joint Test and several Quick Reaction Tests.		
Congressional Add: Threat Resource Analysis	-	5.000
FY 2015 Plans: The funds will be used to increase threat Intel support to DOT&E and will be used to create threat realism in testing. Specifically increase Cyber Intel support to define the up and coming threats. Funds will also be used to expand current Modeling and Simulation configuration management to include Radio Frequency. Other projects to capture the data and capabilities of threat test assets will also be enhanced.		
Congressional Adds Subtotals	60.500	23.000

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

N/A
Remarks
 FFRDC general reduction

D. Acquisition Strategy

Not Applicable

E. Performance Metrics

(U) Performance Measure: Percentage of required products, such as test planning documents, tactics, techniques, procedures, threat characteristics, assessments, and reports that are developed and delivered to program managers and customers on time. The on-time completion rate was computed on the basis of the number of required products that were submitted within established time standards relative to the total number of such products that fell due during the fiscal year.