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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>
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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	673.531	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
MD11: <i>BMDS Radars</i>	664.219	244.645	288.078	246.290	-	246.290	214.980	184.836	132.872	121.112	Continuing	Continuing
MD96: <i>Long Rand Disc Radar (LRDR)</i>	-	-	-	50.500	-	50.500	136.300	152.000	145.400	132.000	Continuing	Continuing
MC11: <i>Cyber Operations</i>	-	-	1.180	1.212	-	1.212	1.247	1.282	1.319	1.352	Continuing	Continuing
MT11: <i>BMDS Radars Test</i>	-	43.953	62.011	71.309	-	71.309	81.782	82.287	96.435	87.372	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	9.312	18.298	15.321	23.582	-	23.582	27.721	28.358	27.246	26.289	Continuing	Continuing

**MDAP/MAIS Code:** 362

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

**Note**

The FY 2014 increase reflects the congressional plus up for enhanced discrimination capability.

The FY 2015 increase reflects the addition of the MD96 Budget Project for the Long Range Discrimination Radar (LRDR) and additional funding for Discrimination Improvements for Homeland Defense (DIHD).

**A. Mission Description and Budget Item Justification**

The Ballistic Missile Defense System (BMDS) network of layered Sensors provides essential situational awareness and fire control data for the command and control of BMDS weapon systems, such as Ground-based Midcourse Defense (GMD), Aegis Ballistic Missile Defense, and Terminal High Altitude Area Defense (THAAD). The suite of remote ground-based sensors provide early warning, midcourse and terminal ballistic missile defense threat data enabling layered detection and tracking of ballistic missile targets, providing fire-control quality position, velocity, and discrimination data through Command and Control, Battle Management, Communications (C2BMC).

Overlapping sensor coverage of geographically diverse sensors provides improved threat track data as well as reducing the loss of any one sensor and reducing the potential impact of countermeasures. The extended coverage and accuracy provided by a network of layered sensors increases the defensive footprint and reduces the number of target engagements required, thereby conserving interceptor inventory and ensuring a high probability of successful engagement. Networked forward-based sensors enables C2BMC to pair the best sensor coverage with the best available weapon system to provide the most effective defense against ballistic missile threats.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable

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of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.

The BMD Sensors Program contributes to regional missile defense through the following activities:

Development, delivery and deployment or redeployment of remote, forward based Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radars to include radars for tests or operations. Radars provide early warning, track, and discrimination data through all phases of ballistic missile flight. Through the BMDS C2BMC and coalition data links, the AN/TPY-2 provides fire control data to enable remote Standard Missile (SM)-3 engagements by Aegis BMD, to allow earlier engagement by the Arrow Weapon System, and to cue deployed THAAD and U.S. and partner PATRIOT batteries.

Provides the enhancements/development of AN/TPY-2 software across the fleet of radars. Lessons learned from each radar are addressed in new software builds that are developed, tested, and subsequently installed at each radar.

AN/TPY-2 radars can be configured to operate either as a THAAD Fire Unit Radar (terminal mode) or Forward-Based Radar. These radars are transportable, adding flexibility to respond to geographical changes in threats. The AN/TPY-2 used in a forward-based role provides detection and tracking during the boost phase. This significantly reduces the uncertainty in target discrimination and reaction time, increasing the probability of a successful BMDS engagement. In forward-based mode, the AN/TPY-2 also provides acquisition and track data via the BMDS C2BMC and Link 16 to the Aegis missile defense system for cueing. The AN/TPY-2 used in terminal mode is an integral component of the THAAD Battery. The THAAD battery radar is capable of tracking multiple threats and multiple interceptors during engagements in the terminal phase. It provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The current and planned utilization of the AN/TPY-2 radars supports GMD, THAAD, and the Aegis Weapon System via C2BMC.

The Ballistic Missile Defense System (BMDS) network of sensors also includes the COBRA DANE Radar at Eareckson Air Force Station in Alaska, and the Upgraded Early Warning Radars (UEWR) at Beale Air Force Base, CA, Fylingdales Royal Air Force, United Kingdom, and at Thule Air Force Base in Greenland.

These Ultra High Frequency Early Warning Radars (EWR) have been upgraded to include missile defense functionality. This upgrade expands the capabilities of the U.S. to include defense against limited long-range threats.

The Clear EWR, located at Clear Air Force Station, AK, and the Cape Cod EWR, Located at Cape Cod Air Force Station, MA are also being upgraded to include missile defense functionality. Upgrade activities began in FY 2012 and are expected to be completed in FY 2017. The addition of the Clear UEWR and Cape Cod UEWRs the BMDS sensor architecture will improve BMDS sensor coverage and provide new engagement options against long-range missile threats.

The BMD Vision Study, conducted by MDA with USSTRATCOM, identified the need to enhance the discrimination capabilities of our sensors and weapon systems. The BMD Sensors Program meets this need through the following activities:

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One of the critical areas identified in the study to be addressed by the future BMDS was the need to provide a more robust discrimination capability to support the defense of the Homeland. As part of the BMDS Integrated Discrimination strategy, the addition of a Long Range Discrimination Radar (LRDR) to the BMDS would address this critical need through providing persistent 24/7 precision tracking and discrimination capability. The development, integration and fielding of the LRDR will provide an improved persistent midcourse Ballistic Missile Defense System (BMDS) discrimination capability in the Pacific architecture, optimize the Ground-Based Midcourse Defense (GMD) interceptor inventory, and address evolving threats. In addition the radar will provide larger hit assessment coverage potentially supporting improved warfighting capability to manage the GBI inventory and improving the capacity of the BMDS.

In addition, there is an Enhanced Discrimination and sensors program that will improve discrimination capabilities of the AN/TPY-02, Cobra Dane, Sea Based X-Band, and the UEWR radars against the long range missile threat.

The BMDS Sensors Program also contributes to the testing and proving of the U.S. missile defense systems through the following activities:

- Participation in BMDS flight and ground test campaigns
- Modeling and simulation (M&S) efforts to include: enhanced sensor models, development of Radio Frequency scene generators, integration of digital simulations into the BMDS M&S architecture, and Verification, Validation, and Accreditation of radar models.

MD40 Program-Wide Support (PWS) consists of essential non-headquarters management costs in support of the MDA functions and activities across the entire Ballistic Missile Defense System (BMDS).

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015 Base</b>	<b>FY 2015 OCO</b>	<b>FY 2015 Total</b>
Previous President's Budget	347.012	315.183	340.899	-	340.899
Current President's Budget	306.896	366.590	392.893	-	392.893
Total Adjustments	-40.116	51.407	51.994	-	51.994
• Congressional General Reductions	-0.458	-0.193			
• Congressional Directed Reductions	-	-3.400			
• Congressional Rescissions	-	-			
• Congressional Adds	-	55.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.816	-			
• SBIR/STTR Transfer	-4.143	-			
• Other Adjustment	-29.699	-	51.994	-	51.994

**Change Summary Explanation**

The FY 2014 increase reflects the congressional plus up for enhanced discrimination capability.

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<b>Appropriation/Budget Activity</b>	<b>R-1 Program Element (Number/Name)</b>
0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide / BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	PE 0603884C / <i>Ballistic Missile Defense Sensors</i>

The FY 2015 increase reflects the addition of the MD96 Budget Project for the Long Range Discrimination Radar (LRDR) and additional funding for enhanced discrimination capability.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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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
MD11: <i>BMDS Radars</i>	664.219	244.645	288.078	246.290	-	246.290	214.980	184.836	132.872	121.112	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

**Note**

Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

**A. Mission Description and Budget Item Justification**

Activities in this project include:

- Development of future Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) and Upgraded Early Warning Radar (UEWR) capabilities
- Development of radar discrimination advanced algorithms for X-Band radars and selectable X-Band software for AN/TPY-2 radars to address evolving threats
- System engineering, software development, and testing support for X-Band, COBRA DANE, and UEWR sensors
- Modeling and Simulation (M&S) efforts to include: enhanced sensor models, development of Radio Frequency scene generators, integration of digital simulations into the Ballistic Missile Defense System (BMDS), M&S architecture, and Verification, Validation, and Accreditation of radar models
- Participation in Ballistic Missile Defense System (BMDS) element ground test campaigns

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Sensors will update radar databases, mature advanced discrimination techniques, and conduct element and system level testing to support Near and Mid-term phases capability against the threat systems defined by MDA Engineering.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2013	FY 2014	FY 2015
<b>Title:</b> X-Band Basic Program	47.583	-	-
<b>Articles:</b>	-	-	-
<b>Description:</b> N/A			
<b>FY 2013 Accomplishments:</b>			
-Continued with Material Release Closure Plan for AN/TPY-2, including a Forward Based Mode (FBM) Material Release Reliability, Availability, and Maintainability (RAM) Get Well plan to promote reliability growth in the suite of AN/TPY-2 radars via incorporation of retrofit change notices (6 of 10 conditions remain active).			
-Supported the Superdome Obsolescence program, including reliability enhancements to the AN/TPY-2 Signal Processor.			
-Supported RAM Scoring Conferences to validate radar reliability growth.			

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<ul style="list-style-type: none"> <li>-Continued Debris Mitigation Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3) and provide enhanced Warfighter capability in complex tactical environments</li> <li>-Conducted Threat Compliance Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3 Threats)</li> <li>-Supported software efforts for Phase Adaptive Approach (PAA) Phase 3 and threat discrimination database improvements for Phase 2.</li> <li>-Operational Flight Test successfully demonstrated Phase 1b Debris Mitigation Performance.</li> </ul> <p><b>FY 2014 Plans:</b> -FY 2014 Plans transferred to Basic Development Program accomplishments</p> <p><b>FY 2015 Plans:</b> -FY 2015 Plans transferred to Basic Development Program accomplishments</p>				
<p><b>Title:</b> Basic Development Program</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b> -See X-Band Basic Program accomplishments</p> <p><b>FY 2014 Plans:</b> -Conduct material release closure plan for Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2), including a Forward Based Mode Material Release Reliability, Availability, and Maintainability Get Well Plan to promote reliability growth in the suite of AN/TPY-2 radars via incorporation of retrofit change notice -Conduct Phase II, Debris Mitigation Development activities required to provide enhanced Warfighter capability in complex tactical environments -Continue to conduct Information Assurance (IA) certification and accreditation of all Sensors systems -Support Bi-Annual IA testing for vulnerabilities and Third Party IA assessment of the systems -Perform Upgrade Early Warning Radar (UEWR) development associated with the reinforcement of the surveillance fence that results in the increased probability of acquisition. -Increase due to the addition of UEWR development work and the Phase II Debris Mitigation Development activities in FY 2014.</p> <p><b>FY 2015 Plans:</b> - Complete ground test and flight test for Phase Adaptive Approach (PAA) Phase II and conduct Material Release Analysis for software delivery</p>		<b>Articles:</b>	-	36.909
		-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<ul style="list-style-type: none"> <li>- Complete Material Release Closure Plan for Forward Base Mode (FBM) and continue to conduct Material Release Closure Plan for Terminal Mode (TM) for Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) including Reliability, Availability, and Maintainability Get Well Plan to promote reliability growth in the suite of AN/TPY-2 radars via incorporation of retrofit change notice</li> <li>- Conduct Phase Adaptive Approach (PAA) Phase III: Objective Debris Mitigation Development and THAAD Threat Development required to provide enhanced capability to the Warfighter in a tactical environment</li> <li>-Continue performing Upgrade Early Warning Radar (UEWR) development such as the reinforcement of the surveillance fence that results in the increased probability of acquisition and the reduction/correction of the radar angle bias that results in increased accuracy of threat tracking</li> <li>-Continue to conduct Information Assurance (IA) certification and accreditation of all Sensors systems</li> <li>-Continue to support Bi-Annual IA testing for vulnerabilities and Third Party IA assessment of the systems</li> </ul>				
<p><b>Title:</b> BMDS Level Testing</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b> -Plans for FY 2013 are described in Budget Project MT11, 0603884C.</p> <p><b>FY 2014 Plans:</b> N/A</p> <p><b>FY 2015 Plans:</b> N/A</p>		<b>Articles:</b>	-	-
			-	-
<p><b>Title:</b> BMDS Radars Modeling &amp; Simulation (M&amp;S)</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b> -Supported Performance Assessment (PA-04) spiral integration, using Open Systems Architecture Sensor Models (OSM) and other models/tools, as appropriate -Continued maintenance of digital and HWIL representations of the tactical versions of AN/TPY2 (CX1.3), SBX 3.1, UEWR 8.0.3, and CDU 2.6.7 and Critical Engagement Condition and Empirical Measurement Event implementation -Funded and supported all UEWR software updates tests in the HWIL simulations in Huntsville</p>		<b>Articles:</b>	43.111	24.927
			-	31.765

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<p>-Continued developing digital simulations of CX software and OSM models deferred from FY 2012</p> <p><b>FY 2014 Plans:</b></p> <p>-Continue to support technical assessments and performance assessments, using OSM and other models/tools, as appropriate</p> <p>-Continue to maintain digital and Hardware in the Loop (HWIL) representations of the tactical versions of Army Navy/ Transportable Radar Surveillance and Control (AN/TPY2)(CX1.2), Sea Based X-Band Radar (SBX) 3.1, Upgraded Early Warning Radar (UEWR) 8.0.3, and Cobra Dane Upgrade(CDU) 2.6.7 and Critical Engagement Condition (CEC) and Empirical Measurement Event (EME)</p> <p>-Begin updates to the Objective Stimulation Framework (OSF)-E interfaces allowing for future events utilizing the OSF-E test architecture</p> <p>-Continue to support Warfighter games and exercises</p> <p>-Execute FY 2014 element-level ground test campaign to support anchoring M&amp;S for various Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME)</p> <p>-Increase due to FY 2014 element-level ground test campaign realignment to BMDS Modeling and Simulation and the updates to the Objective Stimulation Framework (OSF)-E interfaces</p> <p><b>FY 2015 Plans:</b></p> <p>-Continue to maintain digital and Hardware in the Loop (HWIL) representations of the tactical versions of Army Navy/ Transportable Radar Surveillance and Control (AN/TPY2)(CX1.2/2.0), Sea Based X-Band Radar (SBX) 2.3, Upgraded Early Warning Radar (UEWR) 11-1, and Cobra Dane Upgrade(CDU) 2.6.9 and Critical Engagement Condition (CEC) and Empirical Measurement Event (EME)</p> <p>-Continue updates to the Objective Stimulation Framework (OSF)-E interfaces allowing for future events utilizing the OSF-E test architecture</p> <p>-Continue to support Warfighter games and exercises</p> <p>-Execute FY 2015 element-level ground test campaign to support anchoring M&amp;S for various Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME)</p> <p>-Support technical assessments and performance assessments, using OSM and other models/tools, as appropriate</p> <p>-Continue full development of replacement RF scene generator for AN/TPY-2, Sea Based X-Band Radar (SBX), Upgraded Early Warning Radar (UEWR), and Cobra Dane</p>				
<b>Title:</b> Sensors Engineering		30.161	-	-
		<b>Articles:</b>	-	-
<b>Description:</b> N/A				
<b>FY 2013 Accomplishments:</b>				

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<ul style="list-style-type: none"> <li>-Continued to conduct IA certification and accreditation of all sensors systems</li> <li>-Supported Bi-Annual Information Assurance (IA) testing for vulnerabilities and Third Party IA assessment of the systems</li> <li>-Provided debris mitigation and threat compliance engineering support to enable compliance with BMDS System Spec Threat Requirements</li> <li>-Provided Counter-countermeasures (CCM) Program Development engineering support</li> </ul> <p><b>FY 2014 Plans:</b></p> <ul style="list-style-type: none"> <li>-FY 2014 Plans transferred to Capability Development Program accomplishments</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>-FY 2015 Plans transferred to Capability Development Program accomplishments</li> </ul>				
<p><b>Title:</b> Capability Development Program</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-See Sensors Engineering accomplishments</li> </ul> <p><b>FY 2014 Plans:</b></p> <ul style="list-style-type: none"> <li>-Provide engineering support to enable compliance with Ballistic Missile Defense System (BMDS) Spec Threat Capabilities</li> <li>-Continue Debris Mitigation to enhance AN/TPY-2 raid handling capability</li> <li>-Complete software upgrades required to facilitate future Raid and Debris Mitigation capability development</li> <li>-Complete PAA Phase 2 capability to address advanced D2 threats</li> <li>-Continue to perform object classification performance updates to Cobra Dane and UEWR radars.</li> <li>-Initiate development of new discrimination capabilities for X-Band Radars.</li> <li>-Accelerate improvements to X-Band Radar simulations for discrimination performance testing.</li> <li>-Simulation testing, requirements development, and analysis.</li> <li>-Initial Long Range Discrimination Radar (LRDR) site planning, studies, evaluations, and environmental analysis to help determine location and scope of discrimination to be performed.</li> <li>-Mature planned discrimination technology candidates to support the Discrimination Improvements for Homeland Defense (DIHD) Mid-term phase through analysis and prototyping.</li> <li>- Develop DIHD Near-term capability of sensor database improvements for the Sea-Based X-band Radar, AN/TPY-2 forward-based radar, and Cobra Dane.</li> </ul>		<b>Articles:</b>	- 84.825 -	69.103 -

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<p>- Complete development of ground test campaign requirements for DIHD Near-term improvements.</p> <p><b>FY 2015 Plans:</b></p> <p>-Upgrade the entire AN/TPY-2 fleet (Forward-based and THAAD Modes) with a common secure hardware and software configuration</p> <p>-Continue providing engineering support to enable compliance with BMDS Spec Threat Capabilities</p> <p>-Initiate X86 Performance Optimization &amp; Requirements to enhance and increase X86 processing speed.</p> <p>-Initiate PAA Phase 3 capability to address advanced D3 threats.</p> <p>-Test and conduct Material Release Analysis on PAA Phase 2 Capability to address D2 threats.</p> <p>-Conduct software development to support THAAD Launch on Remote, Debris Mitigation Updates, and Threat Updates.</p> <p>-Transition Debris Mitigation to Objective Debris Mitigation Phase II.</p> <p>-Continue to perform object classification performance updates to Cobra Dane and UEWR radars.</p> <p>-Continue development of new discrimination capabilities for X-Band Radar.</p> <p>-Complete DIHD Near-term capability development and Element level testing of sensor database improvements for the Sea-Based X-Band Radar, AN/TPY-2 forward based radar, and Cobra Dane.</p> <p>-Complete integration phase of DIHD Near-term ground testing via GTI-06.</p> <p>-Conduct data collection and analysis for final assessment of discrimination technology candidates planned for DIHD Mid-term improvements.</p>				
<p><b>Title:</b> Sensors Directorate Operations</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b></p> <p>-Provided program management as described for FY 2012, with the exception of funding for UEWR program office support (\$3.400 million), which transitions to O&amp;M</p> <p>-Procured Information Technology (IT) equipment, software and services to implement Department of Defense (DoD) mandated IT projects</p> <p><b>FY 2014 Plans:</b></p> <p>-This effort will continue to provide operations support</p> <p><b>FY 2015 Plans:</b></p> <p>-This effort will continue to provide operations support</p>		77.092	57.196	60.466
		<b>Articles:</b>	-	-
<b>Title:</b> Element Test and Infrastructure		-	-	-

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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<i>Articles:</i>		-	-	-
<b>Description:</b> N/A				
<b>FY 2013 Accomplishments:</b> -Plans for FY 2013 are described in Budget Project MT11, 0603884C BMDS Radar Test				
<b>FY 2014 Plans:</b> N/A				
<b>FY 2015 Plans:</b> N/A				
<b>Title:</b> Upgrade Clear Early Warning Radar		32.558	51.194	38.576
<i>Articles:</i>		-	-	-
<b>Description:</b> N/A				
<b>FY 2013 Accomplishments:</b> -Completed refinement of design, culminating with Data Processor/Signal Processor critical design review (CDR) for hardware and software -Began purchasing and manufacturing of Long Lead UEWR equipment, such as commercial-off-the-shelf (COTS) items and the UEWR receiver/exciter (REX) -Began creation, integration, and unit testing of software and adapting it to UEWR infrastructure -Continued facility design and work -Continued work related to fiber and SATCOM to support BMDS communications and architecture				
<b>FY 2014 Plans:</b> -Upgrade Clear Early Warning Radar with option to upgrade Cape Cod Early Warning Radar to include but not limited to: -Purchasing and manufacturing of Upgraded Early Warning Radar (UEWR) Receiver/Exciter -Purchase of non-original manufacturer equipments -Continue adaptation of hardware and software to UEWR infrastructure -Continue to support Ballistic Missile Defense Systems communications and architecture work -Continue facility design and work -Continue Upgraded Early Warning Radar Huntsville System Test Lab				

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<p>-Decrease due to a reduction in the design and development activities and hardware purchases to begin integration and deployment activities</p> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>-Continue upgrade of Clear and Cape Cod Early Warning Radars to include but not limited to:</li> <li>-Purchasing and manufacturing of Upgraded Early Warning Radar (UEWR) Receiver/Exciter</li> <li>-Purchase of non-original manufacturer equipment</li> <li>-Continue adaptation of hardware and software to UEWR infrastructure</li> <li>-Continue to support Ballistic Missile Defense Systems communications and architecture work</li> <li>-Continue facility design and work</li> <li>-Continue Upgraded Early Warning Radar Huntsville System Test Lab</li> </ul>				
<p><b>Title:</b> AN/TPY-2 Radar Deployment / Site Activation</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>-Purchased Long Lead Material in support of PACOM #2 Deployment CY14</li> <li>-Conducted on-site surveys in support of EMI, site designs</li> <li>-Participated in PACOM #2 Mission Site Design Charrette</li> </ul> <p><b>FY 2014 Plans:</b></p> <ul style="list-style-type: none"> <li>-Deploy an AN/TPY-2 Radar with personnel and ancillary equipment to U.S. Pacific Command (PACOM)</li> <li>-Complete site survey, prepare and activate site, including preparing radar and communications equipment for deployment</li> <li>-Complete installation and deployment activities: radar installation, power installation, fuel tank installation</li> <li>-Complete Contractor Logistic Support (CLS) training of operators and maintainers</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>-No planned deployments in FY 2015</li> </ul>		<p><b>Articles:</b></p> <p>14.113</p> <p>-</p>	<p>28.610</p> <p>-</p>	<p>-</p> <p>-</p>
<p><b>Title:</b> Project Oak</p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b></p>		<p><b>Articles:</b></p> <p>0.027</p> <p>-</p>	<p>4.417</p> <p>-</p>	<p>-</p> <p>-</p>

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2013	FY 2014	FY 2015
-Project Oak details are at a higher classification. This project is reported in accordance with Title 10, United States Code, Section 19 (a)(1) in the Special Access Program Annual Report to Congress			
<b>FY 2014 Plans:</b> -Project Oak details are at a higher classification. The decrease for this project is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress			
<b>FY 2015 Plans:</b> -FY 2015 Plans transferred to Capability Development Program			
<b>Accomplishments/Planned Programs Subtotals</b>	244.645	288.078	246.290

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management &amp; Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	4.191	10.891	38.704	-	38.704	8.042	8.385	8.572	8.836	Continuing	Continuing
• D1400634: <i>BMDS Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	-	17.204	-	-	-	-	-	-	-	-	17.204

**Remarks**

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>

**D. Acquisition Strategy**

The Radar Sustainment Contract (RSC) was awarded in 2012 to sustain all the X-Band Radars including the Army Navy/Transportable Radar Surveillance (AN/TPY-2); the Sea Based X-Band (SBX) Radar; and the Ground Based Radar Prototype (GBR-P). The contract provides sustainment of previously developed X-Band radar products, such as: 1) Software -maintenance of existing software developed to support the X-Band Radars; 2) Models & Simulation; (a) development, maintenance, and verification of high fidelity models, (b) support for war games and exercises, (c) support for performance assessment events; 3) Engineering Services -engineering support for deployed radars to facilitate maintenance efforts which may include but are not limited to hardware obsolescence studies, hardware redesign, technology insertion, and refurbishment efforts; 4) BMDS Test Planning, Execution, and Analysis -planning, execution and analysis of BMDS test requirements for previously developed hardware and software in accordance with the MDA Integrated Master Test Plan (IMTP). The contract is an Indefinite Delivery/Indefinite Quantity (IDIQ) task order contract.

The Missile Defense Agency (MDA) conducted a full and open competition for the Clear Early Warning Radar (EWR) Upgrade. MDA issued a Request for Proposal (RFP) on this effort in 2nd quarter FY 2012 with award in 4th quarter FY 2012. The Cape Cod EWR upgrade option under this contract was awarded in 1st quarter FY2013.

The Ballistic Missile Defense System (BMDS) Communications System Complex-Transportable (BCSC-T) Program Plan addresses the design, development, acquisition, testing, integration, activation, and fielding of the BCSC-T. The overall executing agent is the Program Manager - Communications and Transmission Systems (PMDCATS). Lockheed Martin Mission Systems (C2BMC prime contractor) via an Other Transaction Agreement provides on-site support.

MDA will initiate the MILCON planning and design in FY15 to support the LRDR.

**E. Performance Metrics**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603884C / Ballistic Missile Defense Sensors				MD11 / BMDS Radars							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
X-Band Basic Program - Army Hybrid Program Office	MIPR	SMDC : AL	1.930	0.957		-		-		-		-	-	2.887	-
X-Band Basic Program - Intercept Debris Mitigation	SS/CPAF	Raytheon : MA	0.000	9.500		-		-		-		-	-	9.500	-
X-Band Basic Program - Material Release Get Well Plan	SS/CPFF	Raytheon : MA	0.000	0.610		-		-		-		-	-	0.610	3.100
X-Band Basic Program - X-Band Software Enhancements/ Development	SS/CPFF	Raytheon : AL	158.593	36.516		-		-		-		-	-	195.109	65.363
Basic Development Program - Ground Based Radar Prototype (GBR-P) Caretaker	MIPR	SMDC : AL	0.000	-		1.015	Nov 2013	2.068	Nov 2014	-		2.068	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance AN/TPY-2 (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon : MA	0.000	-		5.288	Nov 2013	5.688	Nov 2014	-		5.688	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance SBX (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon : MA	0.000	-		0.270	Nov 2013	0.232	Nov 2014	-		0.232	Continuing	Continuing	Continuing
Basic Development Program - Material Release Get Well Plan	SS/CPFF	Raytheon : MA	0.000	-		5.430	Nov 2013	7.245	Nov 2014	-		7.245	Continuing	Continuing	Continuing
Basic Development Program - Sys Integration & Tech Assessments	SS/CPFF	Raytheon : MA/AL	0.000	-		7.640	Nov 2013	6.984	Nov 2014	-		6.984	Continuing	Continuing	Continuing
Basic Development Program - X-Band Software Enhancements/ Development	SS/CPFF	Raytheon : AL	0.000	-		17.266	Nov 2013	24.163	Nov 2014	-		24.163	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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<b>Product Development (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
BMDS Radars Modeling & Simulation (M&S) - M&S Development	SS/CPFF	Raytheon : MA	14.863	33.410		17.288	Nov 2013	25.117	Nov 2014	-		25.117	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - VV&A of Models	SS/CPFF	Raytheon : MA	13.450	8.241		6.188	Nov 2013	4.712	Nov 2014	-		4.712	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - Warfighter Exercises	SS/CPFF	Raytheon : MA	1.596	1.460		1.451	Nov 2013	1.936	Nov 2014	-		1.936	Continuing	Continuing	Continuing
Sensors Engineering - Information Assurance AN/TPY-2 (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon : MA	1.750	1.530		-		-		-		-	-	3.280	-
Sensors Engineering - Information Assurance SBX (C-CLS/GMD CCC/X00047)	SS/CPAF	Raytheon : MA	0.250	0.824		-		-		-		-	-	1.074	-
Sensors Engineering - Sensor Registration	SS/CPAF	Raytheon MA : Torch AL	21.801	25.571		-		-		-		-	-	47.372	4.748
Sensors Engineering - Sys Integration & Tech Assessments	SS/CPAF	Raytheon : MA, AL	11.135	2.236		-		-		-		-	-	13.371	-
Capability Development Program - Enhanced Discrimination	C/CPAF	USAF, Raytheon : Hanscom AFB MA	0.000	-		47.446	Nov 2013	21.927	Nov 2014	-		21.927	Continuing	Continuing	Continuing
Capability Development Program - Enhanced Discrimination Studies and Analysis Support	MIPR	SED/AMRDEC, MIT/LL/JHU/APL : AL/MAVA	0.000	-		7.554	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Capability Development Program - Program AN/TPY-2 Capability Development	SS/CPAF	Raytheon : MA	0.000	-		26.067	Nov 2013	35.176	Nov 2014	-		35.176	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603884C / Ballistic Missile Defense Sensors				MD11 / BMDS Radars							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Capability Development Program - UEWR Capability Development	TBD	USAF : Hanscom AFB MA	0.000	-		3.758	Nov 2013	12.000	Nov 2014	-		12.000	Continuing	Continuing	Continuing
Sensors Directorate Operations - Army Hybrid Program Office	MIPR	SMDC : AL	0.000	-		0.979	Nov 2013	1.030	Nov 2014	-		1.030	Continuing	Continuing	Continuing
Sensors Directorate Operations - Govt Salaries, Travel, Training (MDA Sensors)	MIPR	MDA : AL, VA, MA	45.417	22.546		20.210	Nov 2013	21.876	Nov 2014	-		21.876	Continuing	Continuing	Continuing
Sensors Directorate Operations - MiDAESS, FFRDC/UARC	SS/CPAF	CSS, APL, LL, OGA : AL/MA/VA/MD	110.717	31.364		28.452	Nov 2013	29.280	Nov 2014	-		29.280	Continuing	Continuing	Continuing
Sensors Directorate Operations - Network and Infrastructure Services	SS/CPAF	Northrop Grumman : COS, HSV	0.000	15.471		-		-		-		-	Continuing	Continuing	Continuing
Sensors Directorate Operations - Other Govt Agencies	MIPR	SMDC/AL, Hanscom AFB : MA	14.514	7.711		7.555	Nov 2013	8.280	Nov 2014	-		8.280	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - BCN Upgrades	MIPR	MDA C2BMC / DISA : MA, AK	15.600	0.090		2.000	Nov 2013	0.528	Nov 2014	-		0.528	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - Facilities Site Activation/Admin Comms	MIPR	MDA C2BMC : MA, AK	1.299	1.513		2.153	Nov 2013	1.794	Nov 2014	-		1.794	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - GMD Fire Control Integration	SS/CPAF	Boeing/AK/AL, Raytheon : MA	1.366	1.409		1.190	Sep 2014	0.625	Sep 2015	-		0.625	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - HSV UEWR Test Lab Upgrades & Clear Test Lab Representations	SS/CPAF	Raytheon : MA/AL	0.000	-		7.700	Sep 2014	2.763	Sep 2015	-		2.763	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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<b>Product Development (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Upgrade Clear Early Warning Radar - Program Office - OGA	MIPR	USAF : Hanscom AFB, MA	1.755	-		3.659	Nov 2013	-		-		-	-	5.414	-
Upgrade Clear Early Warning Radar - Radar Upgrade -- Prime Contractor	C/CPAF	Raytheon : MA	3.910	29.546		32.592	Nov 2013	32.866	Nov 2014	-		32.866	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - SPA Upgrade & Processor Rehost	MIPR	USAF : Hanscom AFB, MA	1.848	-		1.900	Nov 2013	-		-		-	-	3.748	-
AN/TPY-2 Radar Deployment / Site Activation - Deployment Primary Facilities	MIPR	MDA Deployment : OCONUS, AL	3.293	4.777		-		-		-		-	3.398	11.468	7.120
AN/TPY-2 Radar Deployment / Site Activation - Site Activation & Deployment	SS/CPAF	Raytheon, Global Deployment : OCONUS, AL	32.605	9.336		28.610	Nov 2013	-		-		-	-	70.551	16.382
Project Oak - Project Oak	MIPR	Various : Various	28.002	0.027		4.417	Nov 2013	-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			485.694	244.645		288.078		246.290		-		246.290	-	-	-

**Remarks**  
 Note: Project Oak is described at a higher level of classification.  
 Note: Clear Early Warning Upgrade Program includes upgrade of the Cape Cod EWR.

<b>Support (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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<b>Support (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

**Remarks**  
For FY 2012 thru FY 2014, operations and sustainment of Upgraded Early Warning Radar (UEWR), COBRA DANE (CD), and Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) Radars Contract Logistics Support (CLS) are Operations and Maintenance (O&M) Defense-Wide appropriations and are described in the Missile Defense Agency (MDA) O-Documents.

<b>Test and Evaluation (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Level Testing - AN/TPY-2 FT & GT	SS/CPAF	Raytheon : MA	71.674	-		-		-		-		-	163.402	235.076	266.267
BMDS Level Testing - External Sensors Lab FT & GT Support	SS/CPAF	NG/CA, MDIOC : CO	2.225	-		-		-		-		-	5.106	7.331	7.331
BMDS Level Testing - SBX FT & GT Support	SS/CPAF	Raytheon/MA, Boeing : AL	34.403	-		-		-		-		-	46.715	81.118	85.499
BMDS Level Testing - Thule Upgrade FT & GT	SS/CPAF	Raytheon/MA, Boeing : AL	7.750	-		-		-		-		-	4.133	11.883	13.081
BMDS Level Testing - UEWR/CD FT & GT	SS/CPAF	Raytheon/MA, Boeing : AL	31.160	-		-		-		-		-	62.997	94.157	110.261
Element Test and Infrastructure - ESL SSF Integration	MIPR	AFSPC : CO	0.989	-		-		-		-		-	1.709	2.698	2.742
Element Test and Infrastructure - SBX SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing : AL	9.091	-		-		-		-		-	11.426	20.517	20.862
Element Test and Infrastructure - TPY-2 SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Raytheon : MA	13.750	-		-		-		-		-	43.228	56.978	57.937

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Element Test and Infrastructure - Thule SSF Integration & Sys Test Lab	SS/CPAF	Boeing : AL	2.098	-		-		-		-		-	2.473	4.571	4.649
Element Test and Infrastructure - UEWR/ CD SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing/AL : Raytheon/MA	5.385	-		-		-		-		-	27.090	32.475	33.022
<b>Subtotal</b>			178.525	-		-		-		-		-	368.279	546.804	601.651

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	664.219	244.645	288.078	246.290	-	246.290	-	-	-

**Remarks**  
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2015 Missile Defense Agency</b>		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>

Significant Event Complete ▲    Milestone Decision Complete ★    Element Test Complete ◆    System Level Test Complete ●    Complete Activity ✦  
 Significant Event Planned △    Milestone Decision Planned ☆    Element Test Planned ◇    System Level Test Planned ○    Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
WFTP-04e (Ground test) (Warfighter Exercise)				△																								
SNG-07-H Part 2						△																						
GDEx-06 Part 1 (Ground Test) (Warfighter Exercise)							△																					
GDEx-06 Part 2 (Ground Test) (Warfighter Exercise)											△																	
WFTP-06 (Ground Test) (Warfighter Trial Period)												△																
GDEx 07a (Ground Test) (Warfighter Exercise)															△													
GDEx-07b Part 1 (Ground Test) (Warfighter Trial Period)																			△									
WFTP-07a (Ground Test) (Warfighter Exercise)																			△									
GDEx-07b Part 2 (Ground Test) (Warfighter Exercise)																							△					

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD11 / <i>BMDS Radars</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
WFTP-04e (Ground test) (Warfighter Exercise)	1	2014	1	2014
SNG-07-H Part 2	2	2014	2	2014
GDEx-06 Part 1 (Ground Test) (Warfighter Exercise)	3	2014	3	2014
GDEx-06 Part 2 (Ground Test) (Warfighter Exercise)	3	2015	3	2015
WFTP-06 (Ground Test) (Warfighter Trial Period)	1	2016	1	2016
GDEx 07a (Ground Test) (Warfighter Exercise)	4	2016	4	2016
GDEx-07b Part 1 (Ground Test) (Warfighter Trial Period)	3	2017	3	2017
WFTP-07a (Ground Test) (Warfighter Exercise)	3	2017	3	2017
GDEx-07b Part 2 (Ground Test) (Warfighter Exercise)	3	2018	3	2018

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD96 / <i>Long Rand Disc Radar (LRDR)</i>
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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
<i>MD96: Long Rand Disc Radar (LRDR)</i>	-	-	-	50.500	-	50.500	136.300	152.000	145.400	132.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

**Note**  
N/A

**A. Mission Description and Budget Item Justification**

The BMD Vision Study, conducted by MDA with USSTRATCOM, identified the need to enhance the discrimination capabilities of our sensors and weapon systems. The BMD Sensors Program meets this need through the following activities:

- Development and deployment of Long Range Discrimination Radar (LRDR) to provide an improved persistent midcourse Ballistic Missile Defense System (BMDS) discrimination capability in the Pacific architecture and to increase the defensive capacity of the Ground-Based Midcourse Defense (GMD) interceptor inventory and address evolving threats.
- System engineering, software development, and testing support for LRDR development and future deployment within the Pacific Sensor architecture.
- Modeling and Simulation (M&S) efforts to include: integration of LRDR digital simulations into the Ballistic Missile Defense System (BMDS), M&S architecture, and Verification, Validation, and Accreditation of LRDR models
- Auxiliary mission to augment the USAF Space Surveillance capability

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2013	FY 2014	FY 2015
<b>Title:</b> Long Range Discrimination Radar (LRDR)	-	-	50.500
<b>Articles:</b>	-	-	-
<b>Description:</b> N/A			
<b>FY 2013 Accomplishments:</b> N/A			
<b>FY 2014 Plans:</b> N/A			
<b>FY 2015 Plans:</b> -Complete Long Range Discrimination Radar engineering, environmental, installation, security, integration, availability, discrimination, and modeling & simulation requirements for integrating LRDR into the BMDS architecture.			

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD96 / <i>Long Rand Disc Radar (LRDR)</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2013	FY 2014	FY 2015
-Complete siting and environmental analyses, and final selection of location -Initiate civil engineering effort for installation planning -Complete development of Request for Proposal, release Request for Proposal, review proposals, evaluate candidates, and complete source selection			
<b>Accomplishments/Planned Programs Subtotals</b>	-	-	50.500

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

Line Item	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
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603884C: <i>SENSORS MILCON</i>	-	32.204	-	-	-	67.200	85.200	84.000	57.900	-	326.504
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management &amp; Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 31299903: <i>MILCON PLANNING and DESIGN</i>	4.191	10.891	38.704	-	38.704	8.042	8.385	8.572	8.836	-	87.621

**Remarks**

**D. Acquisition Strategy**

The Long Range Discrimination Radar (LRDR) acquisition strategy is in development by the Missile Defense Agency (MDA).

**E. Performance Metrics**

N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis: PB 2015 Missile Defense Agency</b>											<b>Date: March 2014</b>		
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>				<b>Project (Number/Name)</b> MD96 / <i>Long Rand Disc Radar (LRDR)</i>					

<b>Product Development (\$ in Millions)</b>				<b>FY 2013</b>		<b>FY 2014</b>		<b>FY 2015 Base</b>		<b>FY 2015 OCO</b>		<b>FY 2015 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>			
Long Range Discrimination Radar (LRDR) - Site Activation & Studies	TBD	MDA : AL	0.000	-		-		13.010	Nov 2014	-		13.010	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - XBR - Prime Contractor	TBD	TBD : TBD	0.000	-		-		37.490	Sep 2015	-		37.490	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	-		-		50.500		-		50.500	-	-	-

**Remarks**  
N/A

<b>Prior Years</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015 Base</b>	<b>FY 2015 OCO</b>	<b>FY 2015 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	-	-	50.500	-	-	-	-

**Remarks**  
N/A

**UNCLASSIFIED**

<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2015 Missile Defense Agency</b>		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD96 / <i>Long Rand Disc Radar (LRDR)</i>

Significant Event Complete ▲    Milestone Decision Complete ★    Element Test Complete ◆    System Level Test Complete ●    Complete Activity ✦  
 Significant Event Planned △    Milestone Decision Planned ☆    Element Test Planned ◇    System Level Test Planned ○    Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Long Range Discrimination Radar Capability									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD96 / <i>Long Rand Disc Radar (LRDR)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Long Range Discrimination Radar Capability	1	2015	4	2019

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>
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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
MC11: <i>Cyber Operations</i>	-	-	1.180	1.212	-	1.212	1.247	1.282	1.319	1.352	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

**Note**  
Project MC11 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD11 of this PE.

**A. Mission Description and Budget Item Justification**  
The funds in this project sustain Missile Defense Agency (MDA) DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities, analysis of validation results, risk assessments and reviews of proposed Program Manager/Information Assurance Manager (PM/IAM) Plans of Action and Milestones (POA&Ms) for MDA Sensors mission systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, and Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&M on all MDA information systems.

This project supports the monitoring and tracking of Cyber security mitigation detailed in Information Technology security POA&Ms. Activities include preparation of C&A documentation and accreditation recommendations to the MDA Senior Information Assurance Officer (SIAO)/Certification Authority (CA) and DAA. Independent Verification and Validation (IV&V) team actions ensure the availability, integrity, authentication, confidentiality and non-repudiation of the MDA mission, test and administrative systems. Activities in the Project are necessary to comply with the Federal Information Security Management Act (FISMA).

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2013	FY 2014	FY 2015
<p><b>Title:</b> Network / System Certification and Accreditation (C&amp;A)</p> <p align="right"><b>Articles:</b></p> <p><b>Description:</b> N/A</p> <p><b>FY 2013 Accomplishments:</b> N/A</p> <p><b>FY 2014 Plans:</b> -Fund Sensors Directorate Information Assurance Manager (IAM) civilian salaries -Conduct cyber security / information assurance engineering and architecture planning for Sensors information technology systems -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) Sensors systems</p>	-	1.180	1.212
	-	-	-

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>

<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
-Develop Sensors DIACAP certification and accreditation packages -Conduct Controls Validation Testing (CVT) of Sensors mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies -Conduct annual information assurance reviews on the Sensors enclaves to assess compliance in implementing and maintaining IA controls  <b>FY 2015 Plans:</b> - Continue to fund Sensors Directorate Information Assurance Manager (IAM) civilian salaries - Continue cyber security / information assurance engineering and architecture planning for Sensors information technology systems - Continue to plan and test the IA controls for Ballistic Missile Defense System (BMDS) Sensors systems - Continue to develop Sensors DIACAP certification and accreditation packages - Continue to conduct Controls Validation Testing (CVT) of Sensors mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies - Continue to conduct annual information assurance reviews on the Sensors enclaves to assess compliance in implementing and maintaining IA controls			
<b>Accomplishments/Planned Programs Subtotals</b>	-	1.180	1.212

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

<b>Line Item</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015 Base</b>	<b>FY 2015 OCO</b>	<b>FY 2015 Total</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>	<b>FY 2019</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management &amp; Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>
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**C. Other Program Funding Summary (\$ in Millions)**

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0901598C: <i>Management HQ - MDA</i>	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	4.191	-	9.704	-	9.704	8.042	8.385	8.572	8.836	Continuing	Continuing
• D1300630: <i>Deveselu, Romania AA Missile Defense System Complex</i>	110.590	-	-	-	-	-	-	-	-	-	110.590
• D1400634: <i>Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	-	17.204	-	-	-	-	-	-	-	-	17.204
• D1600640: <i>Poland, AA Missile Defense System</i>	-	-	-	-	-	162.400	-	-	-	-	162.400

**Remarks**

**D. Acquisition Strategy**

N/A

**E. Performance Metrics**

N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>
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<b>Support (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services (Booz Allen)	C/CPFF	Booz Allen Hamilton : AL, CO, VA	0.000	-		0.544	Jul 2014	0.560	Jul 2015	-		0.560	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services (Torch Technologies)	C/CPFF	Torch Technologies : AL, CO, VA	0.000	-		0.478	Jul 2014	0.492	Jul 2015	-		0.492	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	Various	MDA : AL, CO, VA	0.000	-		0.158	Jul 2014	0.160	Jul 2015	-		0.160	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	-		1.180		1.212		-		1.212	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	0.000	-	1.180	1.212	-	1.212	-	-	-

**Remarks**  
N/A

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>

Significant Event Complete ▲    Milestone Decision Complete ★    Element Test Complete ◆    System Level Test Complete ●    Complete Activity ✦  
 Significant Event Planned △    Milestone Decision Planned ☆    Element Test Planned ◇    System Level Test Planned ○    Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BMDS Cyber Security Policy Development					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
SN Transition to Cyber Security Risk Management Framework (CRMF)					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
SN Information Assurance Certification and Accreditation (C&A) Package Preparation / Submission					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
SN Cyber Security Program Policy / Risk Management					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
SN Cyber Security Mitigation Monitoring and Tracking					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MC11 / <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMDS Cyber Security Policy Development	1	2014	4	2019
SN Transition to Cyber Security Risk Management Framework (CRMF)	1	2014	4	2019
SN Information Assurance Certification and Accreditation (C&A) Package Preparation / Submission	1	2014	4	2019
SN Cyber Security Program Policy / Risk Management	1	2014	4	2019
SN Cyber Security Mitigation Monitoring and Tracking	1	2014	4	2019

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>
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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
MT11: <i>BMDS Radars Test</i>	-	43.953	62.011	71.309	-	71.309	81.782	82.287	96.435	87.372	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

**Note**

The MT11 R-4/4A depicts only test events for which Sensors participation is planned. For a full listing of Ballistic Missile Defense System (BMDS) test events, see the R-4/4A in the BMDS Test and Evaluation Program Element (0603914C).

**A. Mission Description and Budget Item Justification**

The Sensors test program for European Phased Adaptive Approach (EPAA) Phase I Initial Integrated Defense supports the Integrated Master Test Plan (IMTP) for Operational Test and Evaluation of theater/regional defense systems that were fielded at the end of Calendar Year 2011 (CY 2011) and supports an Operational Assessment of the Ground-based Midcourse Defense (GMD) weapon system. EPAA Phase I Initial integrated Defense testing (FY 2011-2012) demonstrated Aegis 3.6.1 Standard Missile-3 Block 1A launch on remote Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) Forwards Based Mode (FBM) intercept of an Intermediate Range Ballistic Missile (IRBM) target (FTM-15), demonstrated Command, Control, Battle Management, and Communication (C2BMC) management of two AN/TPY-2 FBM radars (GT-04) and included sensors support for operational flight test engagement of Short Range Ballistic Missile (SRBM) and Medium Range Ballistic Missile (MRBM) threats using a regional/theater BMDS architecture (FTI-01/FTO-01).

The Sensors test program for Robust MRBM Defense (FY 2013-2015) supports the IMTP for Operational Test and Evaluation of strategic and regional BMDS that will be fielded at the end of calendar year 2015. Refer to R-4 for specific test events.

The Sensors test program for Robust IRBM Defense testing (FY 2016-2018) supports the IMTP for Operational Test and Evaluation of the BMDS architecture that will be fielded at the end of Calendar Year 2018 (CY 2018). Refer to R-4 for specific test events.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2013	FY 2014	FY 2015
<b>Title:</b> Ballistic Missile Defense System (BMDS) Level Testing	29.220	40.427	51.915
<b>Articles:</b>	-	-	-
<b>Description:</b> N/A			
<b>FY 2013 Accomplishments:</b>			
- Planned and executed the BMDS Ground Tests Integrated, GTI-04e Part 1 and Part 1a, hardware-in-the-loop (HWIL) in accordance with the BMDS Integrated Master Test Plan (IMTP).			

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014		
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>		
<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>		<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>
<ul style="list-style-type: none"> <li>-Continued planning and began execution of the BMDS Ground Test HWIL GTI-04e Part 2 Benchmarking ; Continued planning for the GTD-04e Part 2 Distributed test event</li> <li>- Completed execution and analysis of the Fast Eagle Distributed Increment 2 ground test event.</li> <li>- Planned and executed the BMDS Flight Test GBI, FTG-07, and Flight Test Operational, FTO-01, in accordance with the BMDS IMTP. Completed analysis of the FTG-07 and began analysis of the FTO-01. Deployed AN/TPY-2 radar to test site for FTO-01.</li> <li>- Planned and executed Fast AIM and Fast Assurance test events</li> <li>- Continued planning for sensors participation in FY 2014 BMDS flight test FTG-06b</li> <li>- Planned and executed the FTO-01 System Pre Mission Test and performed analysis on the data collected</li> <li>- Planned, executed and performed analysis of the FTI-01 System Post Flight Reconstruction ground test event.</li> <li>- Began planning for FTG-08</li> </ul> <p><b>FY 2014 Plans:</b></p> <ul style="list-style-type: none"> <li>-Plan and execute Sensors participation in BMDS Ground Tests in accordance with the BMDS Integrated Master Test Plan (IMTP)</li> <li>-Plan and execute Sensors participation in BMDS Flight Tests in accordance with the BMDS IMTP</li> </ul> <p><b>FY 2015 Plans:</b></p> <ul style="list-style-type: none"> <li>-Plan and execute Sensors participation in BMDS Ground Tests in accordance with the BMDS Integrated Master Test Plan (IMTP)</li> <li>-Plan and execute Sensors participation in BMDS Flight Tests in accordance with the BMDS IMTP</li> </ul>				
<b>Title:</b> Element Test and Infrastructure		14.733	21.584	19.394
<b>Description:</b> N/A		<b>Articles:</b> -	-	-
<p><b>FY 2013 Accomplishments:</b></p> <ul style="list-style-type: none"> <li>- Executed element-level ground test SNG-39-H-4a (satellite data HWIL / digital reconstruction) to support closure of Critical Engagement Condition (CEC) SN-CEC-09</li> <li>- Supported evolving SSF (software upgrades) integration into Sensors HWIL Ground Test infrastructure within the BMDS Integration and Development Lab (BID Lab), Integrated System Test Capability -1 (ISTC-1) and AN/TPY-2 Woburn HWILs</li> <li>- Provided Operator support within the BID Lab for the execution of Fast Aim, Fast Assurance test events, and Product Office algorithm testing, pairwise testing and testing of backward compatibility with GFC</li> <li>- Provided Operator support within the BID Lab for the execution of the Global Defender Exercise (GDEX)</li> <li>- Configured and maintained the Woburn AN/TPY-2 HWIL Ground Test Infrastructure to support BMDS Ground Testing</li> </ul> <p><b>FY 2014 Plans:</b></p> <ul style="list-style-type: none"> <li>-Configure and maintain Sensors HWILs for use in BMDS Ground Tests and element-level ground tests</li> <li>-Configure and maintain Sensors HWILs for use in BMDS Flight Tests System Pre-Mission Testing</li> </ul>				

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)</b>	FY 2013	FY 2014	FY 2015
-Support evolving Single Stimulation Framework (SSF) (software upgrades) integration into the BMDS HWIL Ground Test Infrastructure -Decrease due to element-level ground testing being realigned to BMDS Radars Modeling & Simulation in the MD11 Budget Project  <b>FY 2015 Plans:</b> -Continue to configure and maintain Sensors HWILs for use in BMDS Ground Tests and element-level ground tests -Continue to configure and maintain Sensors HWILs for use in BMDS Flight Tests System Pre-Mission Testing -Continue to support evolving Single Stimulation Framework (SSF) (software upgrades) integration into the BMDS HWIL Ground Test Infrastructure			
<b>Accomplishments/Planned Programs Subtotals</b>	43.953	62.011	71.309

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

Line Item	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
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management &amp; Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	4.191	-	9.704	-	9.704	8.042	8.385	8.572	8.836	Continuing	Continuing
• D1400634: <i>Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	-	17.204	-	-	-	-	-	-	-	-	17.204

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
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**Remarks**

**D. Acquisition Strategy**

Test & Evaluation projects use multiple existing development contracts depending on the system(s) involved in the testing.

**E. Performance Metrics**

N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603884C / Ballistic Missile Defense Sensors				MT11 / BMDS Radars Test							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Remarks</b>															
N/A															
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Remarks</b>															
N/A															
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ballistic Missile Defense System (BMDS) Level Testing - AN/TPY-2 & SBX FT & GT	SS/CPFF	Raytheon : MA	0.000	27.643		31.412	Nov 2013	39.648	Nov 2014	-		39.648	Continuing	Continuing	Continuing
Ballistic Missile Defense System (BMDS) Level Testing - Site Security, Test Range Support, and Site Activation Operations	MIPR	Various : CA, HI, CO	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Ballistic Missile Defense System (BMDS) Level Testing - Thule FT & GT	SS/CPAF	Raytheon, Boeing : MA/AL	0.000	-		-		-		-		-	4.133	4.133	12.881
Ballistic Missile Defense System (BMDS) Level	C/FPIF	deciBel : MA/AL	0.000	1.577		9.015	Nov 2013	12.267	Nov 2014	-		12.267	Continuing	Continuing	Continuing

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>
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<b>Test and Evaluation (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Testing - UEWR/CD FT & GT															
Element Test and Infrastructure - ESL SSF Integration	MIPR	AFSPC : CO	0.000	-		-		-		-		-	1.709	1.709	2.742
Element Test and Infrastructure - TPY-2 & SBX SSF Integration & Infrastructure, Sys Test Lab	SS/CPFF	Raytheon : MA	0.000	11.210		13.069	Nov 2013	14.805	Nov 2014	-		14.805	Continuing	Continuing	Continuing
Element Test and Infrastructure - Thule SSF Integration, Sys Test Lab	SS/CPAF	Boeing : AL	0.000	-		-		-		-		-	2.473	2.473	4.649
Element Test and Infrastructure - UEWR SSF Integration & Infrastructure, Sys Test Lab	C/FPIF	Raytheon, deciBel : AL/MA	0.000	3.523		8.515	Nov 2013	4.589		-		4.589	Continuing	Continuing	Continuing
<b>Subtotal</b>			0.000	43.953		62.011		71.309		-		71.309	-	-	-

**Remarks**  
N/A

<b>Management Services (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
<b>Subtotal</b>			-	-		-		-		-		-	-	-	-

**Remarks**  
N/A

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<b>Exhibit R-3, RDT&amp;E Project Cost Analysis:</b> PB 2015 Missile Defense Agency								<b>Date:</b> March 2014					
<b>Appropriation/Budget Activity</b> 0400 / 4				<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>				<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>					
	<b>Prior Years</b>	<b>FY 2013</b>		<b>FY 2014</b>		<b>FY 2015 Base</b>		<b>FY 2015 OCO</b>		<b>FY 2015 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
<b>Project Cost Totals</b>	0.000	43.953		62.011		71.309		-		71.309	-	-	-

**Remarks**

N/A

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2015 Missile Defense Agency</b>		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>

Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦  
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTI-04e Part 1	✦																											
GTI-04e Part 1a		✦	✦	✦																								
FTG-07				▲																								
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)				▲																								
Fast Phoenix (BMDS Ground Test)					✦																							
GTD-04e Part 2 (BMDS Ground Test)					✦	✦	✦	✦	✦	✦																		
FTG-06b (GM Intercept Flight Test)								△																				
GTI-04e Part 2 (BMDS Ground Test)						✦	✦																					
Fast Falcon (BMDS Ground Test)							✦																					
Fast Osprey (BMDS Ground Test)								✦																				
FTG-09 (GM Intercept Flight Test)										△																		
GTI-06 Part 1 (BMDS Ground Test)										✦	✦																	
FTO-02 E1 (OTA Intercept Flight Test)											△																	
FTT-18 (TH Intercept Flight Test)												△																
GTI-06 Part 2 (BMDS Ground Test)												✦																
FTX-21 (AEGIS SBT Target Only Flight Test)													△															
FTO-02 E2 (OTA Intercept Flight Test)														△														
GTD 06 Part 3 (BMDS Ground Test)															✦													
GTD-06 Part 1a (BMDS Ground Test)																✦												
GTD-06 Part 2 (BMDS Ground Test)																	✦	✦										
FTG-15 (GM Intercept Flight Test)																												
GTD-06 Part 1b (BMDS Ground Test)																												
GTX-07a (BMDS Ground Test)																												
GTI-07a (BMDS Ground Test)																												
Israeli Cooperative Intercept Flight Test - FY 2017																												
FTT-15 (THAAD Intercept Flight Test)																												

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<b>Exhibit R-4, RDT&amp;E Schedule Profile: PB 2015 Missile Defense Agency</b>		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>

Significant Event Complete ▲    Milestone Decision Complete ★    Element Test Complete ◆    System Level Test Complete ●    Complete Activity ✦  
 Significant Event Planned △    Milestone Decision Planned ☆    Element Test Planned ◇    System Level Test Planned ○    Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTD-07a Part 1 (BMDS Ground Test)																												
FTG-13 (OTA Intercept Flight Test)																												
FTX-22 (SN Target Only Flight Test)																												
GTX-07b (BMDS Ground Test)																												
FTM-29 (AEGIS 5.0 Intercept Flight Test)																												
FTO-03 E2 (OTA Intercept Flight Test)																												
PA-07b (BMDS Ground Test)																												
GTI-07b (BMDS Ground Test)																												
GTD-07b Part 2 (BMDS Ground Test)																												
FTO-03 E3 (OTA Intercept Flight Test)																												
FTG-11 (GM Intercept Flight Test)																												
GTD-07b Part 1 (BMDS Ground Test)																												
GTX-08 Part 1 (BMDS Ground Test)																												
FTG-17 (GM Flight Test)																												
FTM-35 (AEGIS 5.0 Intercept Flight Test)																												
GTX-08 Part 2 (BMDS Ground Test)																												

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-04e Part 1	1	2013	1	2013
GTI-04e Part 1a	2	2013	4	2013
FTG-07	4	2013	4	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2013	4	2013
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2015
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014
GTI-04e Part 2 (BMDS Ground Test)	2	2014	3	2014
Fast Falcon (BMDS Ground Test)	4	2014	4	2014
Fast Osprey (BMDS Ground Test)	4	2014	4	2014
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
GTI-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015
FTX-21 (AEGIS SBT Target Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
GTD 06 Part 3 (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 1a (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
GTD-06 Part 1b (BMDS Ground Test)	3	2016	3	2016

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**Exhibit R-4A, RDT&E Schedule Details:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MT11 / <i>BMDS Radars Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTX-07a (BMDS Ground Test)	4	2016	4	2016
GTI-07a (BMDS Ground Test)	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
FTX-22 (SN Targt Only Flight Test)	3	2017	3	2017
GTX-07b (BMDS Ground Test)	1	2018	1	2018
FTM-29 (AEGIS 5.0 Intercept Flight Test)	1	2018	1	2018
FTO-03 E2 (OTA Intercept Flight Test)	3	2018	3	2018
PA-07b (BMDS Ground Test)	3	2018	4	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	4	2018	4	2018
FTO-03 E3 (OTA Intercept FlightTest)	4	2018	4	2018
FTG-11 (GM Intercept Flight Test)	4	2018	4	2018
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
GTX-08 Part 1 (BMDS Ground Test)	3	2019	3	2019
FTG-17 (GM Flight Test)	3	2019	3	2019
FTM-35 (AEGIS 5.0 Intercept Flight Test)	4	2019	4	2019
GTX-08 Part 2 (BMDS Ground Test)	4	2019	4	2019
GTI-08 (BMDS Ground Test)	2	2020	3	2020
FTO-03 E1 (Strat) (OTA Intercept Flight Test)	3	2020	3	2020
FTX-26 (LRDR/Clear) (SN Target Only Flight Test)	3	2020	3	2020
FTT-16 (TH Intercept Flight Test)	4	2020	4	2020
GTD-08 Part 1 (BMDS Ground Test)	4	2020	4	2020

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**Exhibit R-2A, RDT&E Project Justification:** PB 2015 Missile Defense Agency **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD40 / <i>Program-Wide Support</i>
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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
MD40: <i>Program-Wide Support</i>	9.312	18.298	15.321	23.582	-	23.582	27.721	28.358	27.246	26.289	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

**Note**  
N/A

**A. Mission Description and Budget Item Justification**

Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It Includes Government Civilians, Contract Support Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and agency training, office and equipment leases, utilities, data and unified communications support, supplies and maintenance, materiel and readiness and central property management of equipment, and similar operating expenses. Also includes legal settlements. In keeping with congressional intent, Program Wide Support is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

**B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)**

	FY 2013	FY 2014	FY 2015
<b>Title:</b> Program Wide Support	18.298	15.321	23.582
<b>Articles:</b>	-	-	-
<b>Description:</b> N/A			
<b>FY 2013 Accomplishments:</b> See paragraph A: Mission Description and Budget Item Justification			
<b>FY 2014 Plans:</b> See paragraph A: Mission Description and Budget Item Justification			
<b>FY 2015 Plans:</b> See paragraph A: Mission Description and Budget Item Justification			
<b>Accomplishments/Planned Programs Subtotals</b>	18.298	15.321	23.582

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2015 Missile Defense Agency		<b>Date:</b> March 2014
<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD40 / <i>Program-Wide Support</i>

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
N/A

**E. Performance Metrics**  
N/A

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency** **Date:** March 2014

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	<b>Project (Number/Name)</b> MD40 / <i>Program-Wide Support</i>
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<b>Support (\$ in Millions)</b>				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	2.966		0.252		0.304		-		0.304	0.304	3.826	-
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CO, NM, VA, VARIOUS	0.000	-		-		8.251		-		8.251	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various : Multi:AL,VA	0.000	2.050		2.682	Oct 2013	2.138	Nov 2014	-		2.138	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CO, CA, VA	9.312	11.552		12.387	Jan 2014	12.889	Jan 2015	-		12.889	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	Allot	Various : Multi: AL, CO, CA, VA	0.000	1.730		-		-		-		-	Continuing	Continuing	Continuing
<b>Subtotal</b>			9.312	18.298		15.321		23.582		-		23.582	-	-	-

**Remarks**  
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
<b>Project Cost Totals</b>	9.312	18.298	15.321	23.582	-	23.582	-	-	-

**Remarks**  
N/A