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Exhibit R-2, RDT&E Budget Item Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
Total Program Element	509.898	222.696	347.012	315.183	-	315.183	340.899	334.705	341.811	278.313	Continuing	Continuing
MD11: <i>BMDS Radars</i>	509.898	213.384	257.656	236.637	-	236.637	209.844	229.794	252.073	163.323	Continuing	Continuing
MC11: <i>Cyber Operations</i>	-	0.000	0.000	1.180	-	1.180	1.212	1.247	1.282	1.319	Continuing	Continuing
MT11: <i>BMDS Radars Test</i>	-	0.000	72.388	62.045	-	62.045	114.979	89.319	72.749	100.327	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	9.312	16.968	15.321	-	15.321	14.864	14.345	15.707	13.344	Continuing	Continuing

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 OCO Request will be submitted at a later date

Note

The FY 2014 reduction reflects a realignment of funds to the Sea Based X-Band Radar (SBX) Program Element 0603907C to continue Limited Test Support Status established in FY 2013 to continue SBX software development and maintenance, test them concurrently while supporting Ground-based Midcourse Defense (GMD) flight test, and be prepared for short notice contingency deployments.

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

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.

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

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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. Under this Program Element, seven AN/TPY-2 radars have completed manufacturing. 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 Station, United Kingdom, and at Thule Air Force Station 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, is 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 into the BMDS sensor architecture will improve BMDS sensor coverage and provide new engagement options against long-range missile threats and reduce reliance on the Cobra Dane asset.

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).

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B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	222.075	347.012	327.342	-	327.342
Current President's Budget	222.696	347.012	315.183	-	315.183
Total Adjustments	0.621	0.000	-12.159	-	-12.159
• Congressional General Reductions	0.000	0.000			
• Congressional Directed Reductions	0.000	0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds	0.000	0.000			
• Congressional Directed Transfers	0.000	0.000			
• Reprogrammings	0.621	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	-12.159	-	-12.159

Change Summary Explanation

The FY 2014 reduction reflects a realignment of funds to the Sea Based X-Band Radar (SBX) Program Element 0603907C to continue Limited Test Support Status established in FY 2013 to continue SBX software development and maintenance, test them concurrently while supporting Ground-based Midcourse Defense (GMD) flight test, and be prepared for short notice contingency deployments.

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MD11: <i>BMDS Radars</i>	509.898	213.384	257.656	236.637	-	236.637	209.844	229.794	252.073	163.323	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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) flight and ground test campaigns

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

	FY 2012	FY 2013	FY 2014
Title: X-Band Basic Program	12.847	29.725	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Continued development of the Advanced Processor Platform (Superdome Obsolescence Program)			
-Continued development of selectable X-Band software builds (CX-1)			
FY 2013 Plans:			
-Continue 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			
-Support the Superdome Obsolescence program, including reliability enhancements to the AN/TPY-2 Signal Processor			
-Support RAM Scoring Conferences to validate radar reliability growth			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Initiate Debris Mitigation Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3) and provide enhanced Warfighter capability in complex tactical environments</p> <p>-Conduct Threat Compliance Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3 Threats)</p> <p>-Initiate Enhanced Calibration Unit (ECU) Program development</p> <p>FY 2014 Plans:</p> <p>-FY 2014 Plans transferred to Basic Development Program accomplishments</p>				
<p>Title: Basic Development Program</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <p>-See X-Band Basic Program accomplishments</p> <p>FY 2013 Plans:</p> <p>-See X-Band Basic Program accomplishments</p> <p>FY 2014 Plans:</p> <p>-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</p> <p>-Conduct Phase II, Debris Mitigation Development activities required to provide enhanced Warfighter capability in complex tactical environments</p> <p>-Continue to conduct Information Assurance (IA) certification and accreditation of all Sensors systems</p> <p>-Support Bi-Annual IA testing for vulnerabilities and Third Party IA assessment of the systems</p> <p>-Perform Upgrade Early Warning Radar (UEWR) development associated with the reinforcement of the surveillance fence that results in the increased probability of acquisition.</p> <p>-Increase due to the addition of UEWR development work and the Phase II Debris Mitigation Development activities in FY 2014.</p>		0.000 0	0.000 0	36.909 0
<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p>		48.640 0	0.000 0	0.000 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
				FY 2012
				FY 2013
				FY 2014
<p>-Planned sensors participation in BMDS flight tests IAW the BMDS Integrated Master Test Plan(IMTP) (FTI-01, FTG-06b)</p> <p>-Executed sensors participation in BMDS System Pre-Mission Testing (FTI-01)</p> <p>-Planned and executed sensors participation in BMDS ground test campaign in accordance with the BMDS IMTP (GTX-04e, Fast Eagle HWIL and Distributed, GTI-04e Part 1)</p> <p>-Initiated planning for sensors participation in FY 2013 BMDS flight tests and ground tests (FTO-01, GTD-04e Part 1, GTI-04e Part 2, GTI-04e Part 1a, Fast Eagle Distributed Increment 2)</p> <p>FY 2013 Plans:</p> <p>-Plans for FY 2013 are described in Budget Project MT-11</p> <p>FY 2014 Plans:</p> <p>N/A</p>				
<p>Title: BMDS Radars Modeling & Simulation (M&S)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <p>-Supported Technical Assessments and Performance Assessments using Open Systems Architecture Sensor Models (OSM) and Common X-Band Simulation (CXSIM)</p> <p>-Maintained digital and HWIL representations aligned with tactical versions of AN/TPY2 CX1.2, SBX 3.1, UEWR 8.2.3, and CDU 2.6.6 and CEC/EME data analysis and closure</p> <p>FY 2013 Plans:</p> <p>-Continue to support Technical Assessments and Performance Assessments, using Open Systems Architecture Sensor Models (OSM) and other models/tools, as appropriate</p> <p>-Continue to maintain 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</p> <p>-Continue to fund and support all UEWR software updates tests in the HWIL simulations in Huntsville</p> <p>-Continue development of digital simulations of first generation common software and OSM models deferred from FY 2012</p> <p>FY 2014 Plans:</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</p>				<p>4.900</p> <p>0</p> <p>16.190</p> <p>0</p> <p>24.927</p> <p>0</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Warning Radar (UEWR) 8.0.3, and Cobra Dane Upgrade(CDU) 2.6.7 and Critical Engagement Condition (CEC) and Empirical Measurement Event (EME) -Begin updates to the Objective Stimulation Framework (OSF)-E interfaces allowing for future events utilizing the OSF-E test architecture -Continue to support Warfighter games and exercises -Execute FY 2014 element-level ground test campaign to support anchoring M&S for various Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) -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				
Title: Sensors Engineering		1.050	26.366	0.000
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: -Conducted IA certification and accreditation of all Sensors systems -Conducted engineering trade studies for discrimination, system track, battle management and other system functions				
FY 2013 Plans: -Continue to conduct IA certification and accreditation of all sensors systems -Support Bi-Annual Information Assurance (IA) testing for vulnerabilities and Third Party IA assessment of the systems -Provide debris mitigation and threat compliance engineering support to enable compliance with BMDS System Spec Threat Requirements -Provide Counter-countermeasures (CCM) Program Development engineering support				
FY 2014 Plans: -FY 2014 Plans transferred to Capability Development Program accomplishments				
Title: Capability Development Program		0.000	0.000	29.984
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: -See Sensors Engineering accomplishments				
FY 2013 Plans:				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-See Sensors Engineering accomplishments				
FY 2014 Plans: -Provide engineering support to enable compliance with Ballistic Missile Defense System (BMDS) Spec Threat Capabilities -Continue Debris Mitigation to enhance AN/TPY-2 raid handling capability -Complete software upgrades required to facilitate future Raid and Debris Mitigation capability development -Complete PAA Phase 2 capability to address advanced D2 threats -Perform object classification upgrades and update the Clear Early Warning Radar Threat Database -Increase due to software capability enhancements				
Title: Sensors Directorate Operations		54.977	62.068	60.596
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: -This effort provided operations support, but at reduced costs due to efficiencies from in-sourcing and implementation of a new Missile Defense Agency support services contract				
FY 2013 Plans: -This effort will continue to provide program management as described for FY 2012, with the exception of funding for UEWR program office support (\$3.400M), which transitions to O&M				
FY 2014 Plans: -This effort will continue to provide operations support				
Title: Element Test and Infrastructure		15.198	0.000	0.000
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: -Supported evolving Single Stimulation Framework (software upgrades) integration into Sensors Hardware in the Loop (HWIL) Ground Test Infrastructure -Configured and maintained Sensors HWIL Ground Test Infrastructure to support BMDS Ground Tests and System Pre-Mission Testing for BMDS Flight Tests				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Supported Element Ground Test Campaign Start up to support anchoring Models and Simulations for various Critical Engagement Conditions/Empirical Measurement Events FY 2013 Plans: -Plans for FY 2013 are described in Budget Project MT-11, BMDS Radars Test FY 2014 Plans: N/A				
Title: Upgrade Clear Early Warning Radar Description: N/A FY 2012 Accomplishments: -Supported engineering for BMDS Communications work at Clear -Purchased Long Lead fiber and Satellite Communication (SATCOM) to support BMDS Communications -Supported design and implementation of Ground Communications Network (GCN) connectivity and associated Network monitoring for integration into the Ground-Based Midcourse Defense (GMD) -Began purchase of long lead UEWR equipment: commercial-off-the-shelf(COTS) items and the UEWR receiver/exciter (REX) -Awarded Clear Early Warning Radar Upgrade contract with option to upgrade Cape Cod -Accomplished 35% of Clear facilities design -Began refinement of system design, culminating with critical design review (CDR) FY 2013 Plans: -Complete refinement of design, culminating with critical design review (CDR) for hardware and software -Purchasing and manufacturing of Long Lead UEWR equipment, such as commercial-off-the-shelf (COTS) items and the UEWR receiver/exciter (REX) -Creation of software and adapting it to UEWR infrastructure -Continue facility design and work -Continue work related to fiber and SATCOM to support BMDS communications and architecture -Upgrade UEWR Huntsville System Test Lab FY 2014 Plans: -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		Articles: 28.275 0	91.663 0	51.194 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -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 -Decrease due to a reduction in the design and development activities and hardware purchases to begin integration and deployment activities 				
<p>Title: AN/TPY-2 Radar Deployment / Site Activation</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Packaged and shipped AN/TPY-2 Radar #4 to a forward-based radar site -Completed site survey, prepared and activated site, including preparing radar and communications equipment for deployment -Completed installation and deployment activities: radar installation, power installation, fuel tank installation -Completed Contractor Logistic Support (CLS) training of operators and maintainers <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -No planned deployments in FY 2013 <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Deploy an AN/TPY-2 Radar with personel and ancillary equipment to U.S. Pacific Command (PACOM) -Complete site survey, prepare and activate site, including preparing radar and communications equipment for deployment -Complete installation and deployment activities: radar installation, power installation, fuel tank installation -Complete Contractor Logistic Support (CLS) training of operators and maintainers 		19.495 0	0.000 0	28.610 0
<p>Title: Project Oak</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -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 <p>FY 2013 Plans:</p>		28.002 0	31.644 0	4.417 0

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-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			
FY 2014 Plans: -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			
Accomplishments/Planned Programs Subtotals	213.384	257.656	236.637

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

Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	356.900	366.552	418.355		418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	36.684	55.550	47.419		47.419	47.793	53.182	54.037	54.608	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	0.000	4.548	0.000		0.000	0.000	0.000	0.000	0.000	0.000	4.548
• D1400634: <i>BMDS Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	0.000	0.000	17.204		17.204	0.000	0.000	0.000	0.000	0.000	17.204

Remarks

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

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
<p>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.</p> <p>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 1st quarter FY 2012 with award expected in 3rd quarter FY 2012.</p> <p>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.</p> <p>E. Performance Metrics N/A</p>		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
X-Band Basic Program - Army Hybrid Program Office	MIPR	SMDC:AL	0.000	1.930		0.963	Nov 2012	0.000		-		0.000	0.000	2.893	0.000
X-Band Basic Program - Discrete Event Simulation (DESIM) Phase 2&3 Spt to TA10, SW mod for SRR	SS/CPAF	Boeing :AL	8.583	0.000		0.000		0.000		-		0.000	0.000	8.583	8.583
X-Band Basic Program - Discrete Event Simulation (DESIM) Phase 2&3, Open Systems Architecture (OSA) Sensor model	SS/CPAF	NG:AL	9.362	0.000		0.000		0.000		-		0.000	0.000	9.362	9.362
X-Band Basic Program - Intercept Debris Mitigation	SS/CPAF	Raytheon:MA	0.000	0.000		0.303	Nov 2012	0.000		-		0.000	0.000	0.303	0.000
X-Band Basic Program - Material Release Get Well Plan	SS/CPFF	Raytheon:MA	0.000	0.000		2.600	Nov 2012	0.000		-		0.000	0.000	2.600	3.100
X-Band Basic Program - Radar Discrimination Capability Common Advanced Algorithm Insertion	C/CPAF	Raytheon AL:Boeing AL	11.658	0.000		0.000		0.000		-		0.000	0.000	11.658	11.658
X-Band Basic Program - Superdome Obsolescence	SS/CPFF	Raytheon:MA	0.000	0.000		4.300	Nov 2012	0.000		-		0.000	0.000	4.300	0.000
X-Band Basic Program - TPY-2 Radar Field Upgrade (RAFU) Kit Install, Production readiness	SS/CPAF	LM, RDEC:AL	0.697	0.000		0.000		0.000		-		0.000	0.000	0.697	0.697
X-Band Basic Program - Wildcat Software Development	SS/CPAF	Raytheon :MA	12.000	0.000		0.000		0.000		-		0.000	0.000	12.000	12.000
X-Band Basic Program - X-Band Software	SS/CPFF	Raytheon :AL	147.676	10.917		21.559	Nov 2012	0.000		-		0.000	0.000	180.152	65.363

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Enhancements/ Development															
Basic Development Program - Ground Based Radar Prototype (GBR-P) Caretaker	MIPR	SMDC:AL	0.000	0.000		0.000		1.015	Nov 2013	-		1.015	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance AN/TPY-2 (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon:MA	0.000	0.000		0.000		5.288	Nov 2013	-		5.288	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance SBX (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon:MA	0.000	0.000		0.000		0.270	Nov 2013	-		0.270	Continuing	Continuing	Continuing
Basic Development Program - Material Release Get Well Plan	SS/CPFF	Raytheon:MA	0.000	0.000		0.000		5.430	Nov 2013	-		5.430	Continuing	Continuing	Continuing
Basic Development Program - Sys Integration & Tech Assessments	SS/CPFF	Raytheon:MA/AL	0.000	0.000		0.000		7.640	Nov 2013	-		7.640	Continuing	Continuing	Continuing
Basic Development Program - X-Band Software Enhancements/ Development	SS/CPFF	Raytheon:AL	0.000	0.000		0.000		17.266	Nov 2013	-		17.266	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - Legacy Models Support	SS/CPFF	Raytheon MA : Boeing AL	0.962	0.000		0.000		0.000		-		0.000	0.000	0.962	0.962
BMDS Radars Modeling & Simulation (M&S) - M&S Development	SS/CPFF	Raytheon:MA	12.213	2.650		12.781	Nov 2012	17.288	Nov 2013	-		17.288	Continuing	Continuing	Continuing
BMDS Radars Modeling & Simulation (M&S) - VV&A of Models	SS/CPFF	Raytheon:MA	11.200	2.250		1.809	Nov 2012	6.188	Nov 2013	-		6.188	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Radars Modeling & Simulation (M&S) - Warfighter Exercises	SS/CPFF	Raytheon:MA	1.596	0.000		1.600	Nov 2012	1.451	Nov 2013	-		1.451	Continuing	Continuing	Continuing
Sensors Engineering - BMD Sensor M&S	SS/CPAF	Raytheon/MA, APL/MD, NGC/VA, NTB:AL	10.006	0.000		0.000		0.000		-		0.000	0.000	10.006	10.553
Sensors Engineering - BMDS Sensors V&V	SS/CPAF	APL/MD, MIT/MA, Raytheon/MA :AL	3.298	0.000		0.000		0.000		-		0.000	0.000	3.298	3.298
Sensors Engineering - Information Assurance AN/TPY-2 (C-CLS/GMD CCC/ X00047)	SS/CPFF	Raytheon:MA	1.750	0.000		1.821	Nov 2012	0.000		-		0.000	0.000	3.571	0.000
Sensors Engineering - Information Assurance SBX (C-CLS/GMD CCC/ X00047)	SS/CPAF	Raytheon:MA	0.250	0.000		0.260	Nov 2012	0.000		-		0.000	0.000	0.510	0.000
Sensors Engineering - Sensor Registration	SS/CPAF	Raytheon MA:Torch AL	21.801	0.000		21.501	Nov 2012	0.000		-		0.000	0.000	43.302	4.748
Sensors Engineering - Sys Integration & Tech Assessments	SS/CPAF	Raytheon:MA, AL	10.085	1.050		2.784	Nov 2012	0.000		-		0.000	0.000	13.919	0.000
Capability Development Program - Program AN/TPY-2 Capability Development	SS/CPAF	Raytheon:MA	0.000	0.000		0.000		26.226	Nov 2013	-		26.226	Continuing	Continuing	Continuing
Capability Development Program - UEWR Capability Development	TBD	USAF:Hanscom AFB MA	0.000	0.000		0.000		3.758	Nov 2013	-		3.758	Continuing	Continuing	Continuing
Sensors Directorate Operations - Army Hybrid Program Office	MIPR	SMDC:AL	0.000	0.000		0.000		0.979	Nov 2013	-		0.979	Continuing	Continuing	Continuing
Sensors Directorate Operations - Govt Salaries,	MIPR	MDA:AL, VA	29.667	15.750		21.939	Nov 2012	21.510	Nov 2013	-		21.510	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Travel, Training (MDA Sensors)															
Sensors Directorate Operations - MiDAESS, FFRDC/UARC	SS/CPAF	CSS, APL, LL, OGA:AL/MA/VA/MD	79.137	31.580		31.232	Nov 2012	29.752	Nov 2013	-		29.752	Continuing	Continuing	Continuing
Sensors Directorate Operations - Other Govt Agencies	MIPR	SMDC/AL, Hanscom AFB:MA	6.867	7.647		8.897	Nov 2012	8.355	Nov 2013	-		8.355	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - BCN Upgrades	MIPR	MDA C2BMC / DISA:MA, AK	0.000	15.600		9.000	Nov 2012	2.000	Nov 2013	-		2.000	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - DPF Site Activation/Admin Comms	MIPR	MDA C2BMC:MA, AK	0.000	1.299		2.117	Nov 2012	2.153	Nov 2013	-		2.153	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - Design Refinement	C/CPAF	Raytheon, Boeing, or Other:MA, AK, AL	0.000	2.497		0.000		0.000		-		0.000	0.000	2.497	8.276
Upgrade Clear Early Warning Radar - GMD Fire Control Integration	SS/CPAF	Boeing/AK/AL, Raytheon:MA	0.000	1.366		4.300	Nov 2012	1.190	Sep 2014	-		1.190	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - HSV UEWB Test Lab Upgrades & Clear Test Lab Representations	SS/CPAF	Raytheon:MA/AL	0.000	0.000		7.500	Nov 2012	7.700	Sep 2014	-		7.700	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - Program Office - OGA	MIPR	USAF:Hanscom AFB, MA	0.000	1.755		5.345	Nov 2012	3.659	Nov 2013	-		3.659	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - Radar Upgrade -- Prime Contractor	C/CPAF	Raytheon, Boeing, or Other:MA, AK, AL	0.000	3.910		47.420	Sep 2013	32.592	Nov 2013	-		32.592	Continuing	Continuing	Continuing
Upgrade Clear Early Warning Radar - SPA	MIPR	USAF:Hanscom AFB, MA	0.000	1.848		15.981	Nov 2012	1.900	Nov 2013	-		1.900	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Upgrade & Processor Rehost															
AN/TPY-2 Radar Deployment / Site Activation - DPW Primary Facilities	MIPR	MDA DPW:OCONUS, AL	0.000	3.293		0.000		0.000		-		0.000	3.398	6.691	7.120
AN/TPY-2 Radar Deployment / Site Activation - Site Activation & Deployment	SS/CPAF	Raytheon, Global Deployment:OCONUS, AL	16.403	16.202		0.000		28.610	Nov 2013	-		28.610	0.000	61.215	16.382
Project Oak - Project Oak	MIPR	Various:Various	0.000	28.002		31.644	Nov 2012	4.417	Nov 2013	-		4.417	Continuing	Continuing	Continuing
Subtotal			395.211	149.546		257.656		236.637		0.000		236.637			

Remarks
Note: Project Oak is described at a higher level of classification.

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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.

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	46.959	24.715		0.000		0.000		-		0.000	163.402	235.076	266.267

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Level Testing - External Sensors Lab FT & GT Support	SS/CPAF	NG/CA, MDIOC:CO	1.248	0.977		0.000		0.000		-		0.000	5.106	7.331	7.331
BMDS Level Testing - SBX FT & GT Support	SS/CPAF	Raytheon/MA, Boeing:AL	28.075	6.328		0.000		0.000		-		0.000	46.715	81.118	85.499
BMDS Level Testing - Thule Upgrade FT & GT	SS/CPAF	Raytheon/MA, Boeing:AL	6.630	1.120		0.000		0.000		-		0.000	4.133	11.883	13.081
BMDS Level Testing - UEWR/CD FT & GT	SS/CPAF	Raytheon/MA, Boeing:AL	15.660	15.500		0.000		0.000		-		0.000	62.997	94.157	110.261
Element Test and Infrastructure - ESL SSF Integration	MIPR	AFSPC:CO	0.646	0.343		0.000		0.000		-		0.000	1.709	2.698	2.742
Element Test and Infrastructure - SBX SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing:AL	6.431	2.660		0.000		0.000		-		0.000	11.426	20.517	20.862
Element Test and Infrastructure - TPY-2 SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Raytheon:MA	6.368	7.382		0.000		0.000		-		0.000	43.228	56.978	57.937
Element Test and Infrastructure - Thule SSF Integration & Sys Test Lab	SS/CPAF	Boeing:AL	1.500	0.598		0.000		0.000		-		0.000	2.473	4.571	4.649
Element Test and Infrastructure - UEWR/CD SSF Integration & Infrastructure, Sys Test Lab	SS/CPAF	Boeing/AL:Raytheon/MA	1.170	4.215		0.000		0.000		-		0.000	27.090	32.475	33.022
Subtotal			114.687	63.838		0.000		0.000		0.000		0.000	368.279	546.804	601.651

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract					
Project Cost Totals	509.898	213.384		257.656		236.637		0.000		236.637				

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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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	▲																											
GTX-04e (BMDS Focused Ground Test)		▲																										
Fast Eagle Increment 1			▲																									
SNG-39-H-5 (SN Element Ground Test)								△																				
WFTP-04e (Ground test) (Warfighter Exercise)								△																				
SNG-55-H (SN Element Ground Test)									△																			
GDEx-06 Part 1 (Ground Test) (Warfighter Exercise)										△																		
SNG-39-H-8 (SN Element Ground Test)											△																	
SNG-39-H-11 (SN Element Ground Test)												△																
SNG-39-H-3 (SN Element Ground Test)													△															
SNG-54-H (SN Element Ground Test)														△														
SNG-39-H-6 (SN Element Ground Test)															△													
GDEx-06 Part 2 (Ground Test) (Warfighter Exercise)																△												
SNG-52-H (SN Element Ground Test)																	△											
SNG-39-H-1 (SN Element Ground Test)																		△										
SNG-39-H-2 (SN Element Ground Test)																			△									
WFTP-06 (Ground Test) (Warfighter Trial Period)																				△								
SNG-21-H (SN Element Ground Test)																					△							
SNG-40-H (SN Element Ground Test)																						△						
GDEx 07a (Ground Test) (Warfighter Exercise)																							△					
SNG-27-S (SN Element Ground Test)																								△				
SNG-10-H (SN Element Ground Test)																									△			
GDEx-07b Part 1 (Ground Test) (Warfighter Trial Period)																										△		
WFTP-07a (Ground Test) (Warfighter Exercise)																										△		
SNG-56-H (SN Element Ground Test)																										△		
SNG-09-H (SN Element Ground Test)																											△	
GDEx-07b Part 2 (Ground Test) (Warfighter Exercise)																											△	

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	1	2012	1	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Fast Eagle Increment 1	3	2012	3	2012
SNG-39-H-5 (SN Element Ground Test)	1	2014	1	2014
WFTP-04e (Ground test) (Warfighter Exercise)	1	2014	1	2014
SNG-55-H (SN Element Ground Test)	2	2014	2	2014
GDEx-06 Part 1 (Ground Test) (Warfighter Exercise)	3	2014	3	2014
SNG-39-H-8 (SN Element Ground Test)	3	2014	3	2014
SNG-39-H-11 (SN Element Ground Test)	4	2014	4	2014
SNG-39-H-3 (SN Element Ground Test)	1	2015	1	2015
SNG-54-H (SN Element Ground Test)	2	2015	2	2015
SNG-39-H-6 (SN Element Ground Test)	2	2015	2	2015
GDEx-06 Part 2 (Ground Test) (Warfighter Exercise)	3	2015	3	2015
SNG-52-H (SN Element Ground Test)	4	2015	4	2015
SNG-39-H-1 (SN Element Ground Test)	4	2015	4	2015
SNG-39-H-2 (SN Element Ground Test)	4	2015	4	2015
WFTP-06 (Ground Test) (Warfighter Trial Period)	1	2016	1	2016
SNG-21-H (SN Element Ground Test)	2	2016	2	2016
SNG-40-H (SN Element Ground Test)	3	2016	3	2016
GDEx 07a (Ground Test) (Warfighter Exercise)	4	2016	4	2016
SNG-27-S (SN Element Ground Test)	1	2017	1	2017
SNG-10-H (SN Element Ground Test)	2	2017	2	2017

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GDEx-07b Part 1 (Ground Test) (Warfighter Trial Period)	3	2017	3	2017
WFTP-07a (Ground Test) (Warfighter Exercise)	3	2017	3	2017
SNG-56-H (SN Element Ground Test)	3	2017	3	2017
SNG-09-H (SN Element Ground Test)	1	2018	1	2018
GDEx-07b Part 2 (Ground Test (Warfighter Exercise)	3	2018	3	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MC11: <i>Cyber Operations</i>	-	0.000	0.000	1.180	-	1.180	1.212	1.247	1.282	1.319	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012

^{##} The FY 2014 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 mitigations 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. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2012	FY 2013	FY 2014
Title: Network / System Certification and Accreditation (C&A)	0.000	0.000	1.180
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: N/A			
FY 2014 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-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 -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			
Accomplishments/Planned Programs Subtotals	0.000	0.000	1.180

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	67.921	79.975	309.203		309.203	212.715	220.185	220.732	220.373	Continuing	Continuing
• 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	88.162	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	88.162
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	356.900	366.552	418.355		418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	36.684	55.550	47.419		47.419	47.793	53.182	54.037	54.608	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	28.824	34.855	37.712		37.712	38.580	39.546	40.320	35.325	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	0.000	4.548	0.000		0.000	0.000	0.000	0.000	0.000	0.000	4.548

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• D1300630: <i>Deveselu, Romania AA Missile Defense System Complex</i>	0.000	157.900	0.000		0.000	0.000	0.000	0.000	0.000	0.000	157.900
• D1400634: <i>Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	0.000	0.000	17.204		17.204	0.000	0.000	0.000	0.000	0.000	17.204
• D1600640: <i>Poland, AA Missile Defense System</i>	0.000	0.000	0.000		0.000	0.000	162.400	0.000	0.000	0.000	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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	0.000		0.000		0.544	Jul 2014	-		0.544	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	0.000		0.000		0.478	Jul 2014	-		0.478	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	Various	MDA:AL, CO, VA	0.000	0.000		0.000		0.158	Jul 2014	-		0.158	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		1.180		0.000		1.180			

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	0.000	1.180	0.000	1.180			

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMDS Cyber Security Policy Development	1	2014	4	2018
SN Transition to Cyber Security Risk Management Framework (CRMF)	1	2014	4	2018
SN Information Assurance Certification and Accreditation (C&A) Package Preparation / Submission	1	2014	4	2018
SN Cyber Security Program Policy / Risk Management	1	2014	4	2018
SN Cyber Security Mitigation Monitoring and Tracking	1	2014	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MT11: <i>BMDS Radars Test</i>	-	0.000	72.388	62.045	-	62.045	114.979	89.319	72.749	100.327	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 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 IA 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 will include 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 2012	FY 2013	FY 2014
Title: Ballistic Missile Defense System (BMDS) Level Testing	0.000	39.322	40.427
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency		DATE: April 2013		
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Plan and execute sensors participation in the BMDS GTI-04e hardware-in-the-loop (HWIL) and GTD-04e distributed ground tests in accordance with the BMDS Integrated Master Test Plan (IMTP) -Initiate planning for sensors participation in FY 2014 BMDS flight tests FTG-08, FTT-11a, FTX-14, AAFTM-01, FTM-24 and GTX-06 HWIL ground test -Plan for Near-Term Discrimination initial assessments in FY 2014 BMDS flight test FTG-08 and GTX-06 HWIL ground test <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Plan and execute Sensors participation in BMDS Ground Tests in accordance with the BMDS Integrated Master Test Plan (IMTP) -Plan and execute Sensors participation in BMDS Flight Tests in accordance with the BMDS IMTP 				
Title: Element Test and Infrastructure		0.000	33.066	21.618
	Articles:	0	0	0
Description: N/A				
FY 2012 Accomplishments: N/A				
FY 2013 Plans:				
<ul style="list-style-type: none"> -Execute FY 2013 element-level ground test campaign consisting of SNG-26-S (Strong Ionospheric Scintillation data collection), SNG-09-H (X-Band discrimination HWIL assessment) and SNG-39-H (satellite data HWIL / digital reconstruction) to support anchoring M&S for various Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME). -Support evolving SSF (software upgrades) integration into Sensors HWIL Ground Test infrastructure -Configure and maintain sensors HWIL Ground Test Infrastructure to support BMDS Ground Tests 				
FY 2014 Plans:				
<ul style="list-style-type: none"> -Configure and maintain Sensors HWILs for use in BMDS Ground Tests and element-level ground tests -Configure and maintain Sensors HWILs for use in BMDS Flight Tests System Pre-Mission Testing -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 				
Accomplishments/Planned Programs Subtotals		0.000	72.388	62.045

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDs Radars Test</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u> <u>Base</u>	<u>FY 2014</u> <u>OCO</u>	<u>FY 2014</u> <u>Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	356.900	366.552	418.355		418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	36.684	55.550	47.419		47.419	47.793	53.182	54.037	54.608	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	58.970	63.043	52.131		52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	183.506	9.730	44.478		44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	484.838	454.400	375.866		375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	0.000	4.548	0.000		0.000	0.000	0.000	0.000	0.000	0.000	4.548
• D1400634: <i>Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	0.000	0.000	17.204		17.204	0.000	0.000	0.000	0.000	0.000	17.204

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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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Product Development (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ballistic Missile Defense System (BMDS) Level Testing - AN/TPY-2 & SBX FT & GT	SS/CPFF	Raytheon:MA	0.000	0.000		24.901	Nov 2012	31.412	Nov 2013	-		31.412	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	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Ballistic Missile Defense System (BMDS) Level Testing - Thule FT & GT	SS/CPAF	Raytheon, Boeing:MA/AL	0.000	0.000		0.998	Nov 2012	0.000		-		0.000	4.133	5.131	12.881
Ballistic Missile Defense System (BMDS) Level	C/FPIF	deciBel:MA/AL	0.000	0.000		13.423	Nov 2012	9.015	Nov 2013	-		9.015	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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Test and Evaluation (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	0.000		0.356	Nov 2012	0.000		-		0.000	1.709	2.065	2.742
Element Test and Infrastructure - TPY-2 & SBX SSF Integration & Infrastructure, Sys Test Lab	SS/CPFF	Raytheon:MA	0.000	0.000		27.839	Nov 2012	13.103	Nov 2013	-		13.103	Continuing	Continuing	Continuing
Element Test and Infrastructure - Thule SSF Integration, Sys Test Lab	SS/CPAF	Boeing:AL	0.000	0.000		0.645	Nov 2012	0.000		-		0.000	2.473	3.118	4.649
Element Test and Infrastructure - UEWR SSF Integration & Infrastructure, Sys Test Lab	C/FPIF	Boeing, Raytheon, deciBel:AL/MA	0.000	0.000		4.226	Nov 2012	8.515	Nov 2013	-		8.515	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		72.388		62.045		0.000		62.045			

Remarks
N/A

Management Services (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2014 Missile Defense Agency							DATE: April 2013			
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>			PROJECT MT11: <i>BMDS Radars Test</i>			
	All Prior Years	FY 2012	FY 2013		FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.000	72.388		62.045	0.000	62.045			

Remarks

N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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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 2012				FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018			
	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
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)							○																					
GTD-04e Part 2 (BMDS Ground Test)								✦	✦																			
GTI-ISR-14 (BMDS Ground Test)								✦	✦	✦	✦																	
Fast Event 1									△																			
Fast Event 2										△																		
GTX-06 (BMDS Ground Test)										✦	✦																	
FTG-09 (GM Intercept Flight Test)											△																	
GTI-06 Part 1 (BMDS Ground Test)											✦	✦																
AA FTM 02 (Aegis Ashore Intercept Flight Test)												△																
GTD-06 Part 1 (BMDS Ground Test)													✦	✦														
FTX-22 (Cobra Dane Flight Test)														△														
FTT-11a (THAAD Intercept Flight Test)															△													
GTI-06 Part 2 (BMDS Ground Test)																✦	✦											
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																	△											
FTG-11 (GM Intercept Flight Test) (Salvo)																		△										
GTD-06 Part 2 (BMDS Ground Test)																			✦	✦								
GTX-07a (BMDS Ground Test)																				✦	✦	✦						
GTI-07a (BMDS Ground Test)																					✦	✦	✦					
FTX-23 (Aegis Flight Test)																						△						
FTG-15 (GM Intercept Flight Test)																							△					
GTD-07a Part 1 (BMDS Ground Test)																								✦	✦			
Israeli Cooperative Intercept Flight Test - FY 2016																									✦	✦	✦	
GTD-07a Part 2 (BMDS Ground Test)																										✦	✦	
FTT-15 (THAAD Intercept Flight Test)																											△	
GTX-07b (BMDS Ground Test)																												✦
FTG-13 (GM Intercept Flight Test)																												✦
GTI-07b (BMDS Ground Test)																												✦
FTM-29 (Aegis Intercept Flight Test)																												△
GTD-07b Part 2 (BMDS Ground Test)																												✦
Israeli Cooperative Intercept Flight Test - FY 2018																												✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency		DATE: April 2013
APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2013	3	2013
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
GTI-ISR-14 (BMDS Ground Test)	1	2014	4	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
FTG-09 (GM Intercept Flight Test)	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	4	2014	1	2015
AA FTM 02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
GTD-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTX-22 (Cobra Dane Flight Test)	3	2015	3	2015
FTT-11a (THAAD Intercept Flight Test)	3	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	3	2015	4	2015
FTO-02 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2015	4	2015
GTD-06 Part 2 (BMDS Ground Test)	4	2015	1	2016
GTX-07a (BMDS Ground Test)	1	2016	3	2016
GTI-07a (BMDS Ground Test)	2	2016	4	2016
FTX-23 (Aegis Flight Test)	3	2016	3	2016
FTG-15 (GM Intercept Flight Test)	4	2016	4	2016
GTD-07a Part 1 (BMDS Ground Test)	4	2016	1	2017
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016

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Exhibit R-4A, RDT&E Schedule Details: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-07a Part 2 (BMDS Ground Test)	1	2017	2	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
GTX-07b (BMDS Ground Test)	2	2017	4	2017
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017
GTI-07b (BMDS Ground Test)	4	2017	2	2018
FTM-29 (Aegis Intercept Flight Test)	1	2018	1	2018
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	3	2018	4	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2018	4	2018

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD40: <i>Program-Wide Support</i>
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COST (\$ in Millions)	All Prior Years	FY 2012	FY 2013 [#]	FY 2014 Base	FY 2014 OCO ^{##}	FY 2014 Total	FY 2015	FY 2016	FY 2017	FY 2018	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	9.312	16.968	15.321	-	15.321	14.864	14.345	15.707	13.344	Continuing	Continuing
Quantity of RDT&E Articles		0	0	0		0	0	0	0	0		

[#] FY 2013 Program is from the FY 2013 President's Budget, submitted February 2012
^{##} The FY 2014 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 2012	FY 2013	FY 2014
Title: Program Wide Support	9.312	16.968	15.321
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	9.312	16.968	15.321

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Exhibit R-2A, RDT&E Project Justification: PB 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE	PROJECT
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	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 2014 Missile Defense Agency **DATE:** April 2013

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD40: <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2012		FY 2013		FY 2014 Base		FY 2014 OCO		FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	All 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	0.000		2.111	Mar 2013	0.000		-		0.000	2.111	4.222	0.000
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various:Multi:AL,VA	0.000	0.000		2.362	Feb 2013	2.987	Oct 2013	-		2.987	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AL, CO, CA, VA	0.000	9.312		11.097	Jul 2013	10.936	Jan 2014	-		10.936	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Sustainment GPC	Allot	Various:Multi: AL, CO, CA, VA	0.000	0.000		1.398	Dec 2012	1.398	Oct 2013	-		1.398	Continuing	Continuing	Continuing
Subtotal			0.000	9.312		16.968		15.321		0.000		15.321			

Remarks
N/A

	All Prior Years	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	9.312	16.968	15.321	0.000	15.321			

Remarks
N/A