

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>
---	---

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	30.113	7.940	6.912	6.515	-	6.515	6.522	7.128	7.289	7.378	Continuing	Continuing
MD33: <i>MD Space Exp Center (MDSEC)</i>	30.113	7.940	6.561	6.173	-	6.173	6.205	6.763	6.880	6.972	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	0.000	0.351	0.342	-	0.342	0.317	0.365	0.409	0.406	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

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 Missile Defense Space Development Center (MDSDC) facilitates the integration and demonstration of missile defense space capabilities with other defense and national security systems.

The MDSDC infrastructure provides Missile Defense Agency (MDA) user capabilities for supporting flight tests, conducting concept development, demonstrations, experiments, and developing and evaluating algorithms within a multi-security level, collaborative environment. As part of a collaborative environment, the MDSDC conducts studies and experiments with Air Force Space Command seeking to optimize future MDA space layer options to support Space Situational Awareness (SSA).

The MDSDC provides MDA elements with a central point of activity for Ballistic Missile Defense System (BMDS) space sensor layer operations and integration to support the ballistic missile defense mission. The infrastructure of the MDSDC supports the operation and control of MDA satellites such as Space Tracking Surveillance System Demonstration (STSS-D) Satellites and the Near Field Infrared Experiment (NFIRE) satellite. In addition, the MDSDC annual operating expenses provide infrastructure support for security, configuration management, engineering, test, experiment, data, and logistics and create a collaborative environment for the MDA community that includes STSS-D; NFIRE; BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA); Command and Control, Battle Management and Communications (C2BMC); Integrated Sensor Manager (ISM); MDA C2BMC Experimentation Laboratory (X-Lab); MDA Enterprise Sensors Laboratory (ESL); and future MDA space layer options.

Modeling and Simulation (M&S) activities at the MDSDC support all phases of STSS-D maturation, including: development and necessary revision of Mission Planning and Analysis Tools, Data Collection Events, System Functional and Performance Tests, flight test missions, ground tests, wargames, exercises, and performance assessments (PAs).

Goals for the MDSDC:

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>
---	---

- Develop and refine ground operational concepts for MDA space systems, sensors, data, services, and networks
- Conduct satellite operations for MDA space sensor satellites (STSS-D, NFIRE)
- Operate and refine the MDSDC Interchange System (MIS) to provide robust access to MDA space data and MDA user net-centric sensor tasking request interface
- Develop a security environment to support data integration, test, demonstrations, and experiments across multiple security levels
- Provide a Test Integration Lab (TIL) to support testing, demonstrations, experiments, integration and algorithm development
- Demonstrate connectivity and integration of space sensor layer data for the BMDS community and external users
- Conduct experiments to test algorithm validity for Missile Defense space systems
- Conduct studies and experiments with Air Force Space Command to optimize future MDA space layer options to support SSA
- Mature BMDS space based sensing through studies, analysis, sensor data integration, algorithm development, performance assessments, and architecture improvements
- Develop and mature Joint space sensing CONOPS, Tactics, Techniques, & Procedures (TTPs), and asset management to evaluate space based sensor contributions to the BMDS
- Integrate and evaluate MDA, other DoD agencies, and Services space capabilities to demonstrate space based sensing contributions for discrimination support, hit assessment, dim target detection and tracking, advanced threat tracking, and wideband IR sensor data integration and exploitation
- Develop and demonstrate real Infrared/Radar data fusion (System Track)
- Conduct experiments and demonstrate Space Tracking Surveillance System Demonstration (STSS-D) Satellites discrimination capabilities (identifying object details to determine the target from debris or decoys)
- Provide infrastructure to demonstrate integration of missile defense space capabilities with other defense and national security systems

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. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	7.940	6.912	6.576	-	6.576
Current President's Budget	7.940	6.912	6.515	-	6.515
Total Adjustments	0.000	0.000	-0.061	-	-0.061
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	-0.061	-	-0.061

UNCLASSIFIED

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

APPROPRIATION/BUDGET ACTIVITY
0400: *Research, Development, Test & Evaluation, Defense-Wide*
BA 4: *Advanced Component Development & Prototypes (ACD&P)*

R-1 ITEM NOMENCLATURE
PE 0603895C: *Ballistic Missile Defense System Space Programs*

Change Summary Explanation

FY 2014 reduction reflects realignment of Department of Defense priorities.

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

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
MD33: <i>MD Space Exp Center (MDSEC)</i>	30.113	7.940	6.561	6.173	-	6.173	6.205	6.763	6.880	6.972	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

The Missile Defense Space Development Center (MDSDC) allows Missile Defense Agency (MDA) elements to conduct satellite on-orbit operations and to conduct flight test, demonstrations, experiments, data integration, algorithm development and test, and concept exploration. The annual operating expenses for the MDSDC provide overhead functions to include security, configuration management, engineering, test, demonstration, experiment, data analysis and integration, and logistics support for satellite operations and MDA users to include Space Tracking and Surveillance System Demonstration (STSS-D) Satellites; Near Field Infrared Experiment (NFIRE); Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA); Command and Control, Battle Management and Communications (C2BMC); Integrated Sensor Manager (ISM); MDA C2BMC X-Lab; MDA Enterprise Sensors Laboratory (ESL); and future MDA space layer options. The MDSDC Space Layer activities include integration and experimentation across a broad range of BMDS activities to include target signatures, sensor registration, health and status, sensor performance, sensor and weapons netting (with C2BMC and C2BMC X-Lab), modeling and simulation, OPIR Data Fusion and advanced features, discrimination, typing, clutter mitigation, and target kill and impact point assessments.

The MDSDC provides infrastructure to support satellite operations for STSS-D and NFIRE as the single location for MDA elements to conduct satellite on-orbit operations. The MDSDC also provides a multi-level security environment for sensor data management and integration across space and terrestrial sensor data activities. MDSDC experiments leverage Department of Defense (Defense Support Program, Space Based Infrared System) and National Security Space capabilities. MDSDC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSDC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other merging sensor technologies). MDSDC supports mission integration of space-based missile tracking (boost and midcourse phases), sensor and weapons cueing via C2BMC, features and discrimination, kill and impact point assessments into C2BMC, Aegis Launch on STSS-D, Aegis Engage on STSS-D, Terminal High Altitude Area Defense (THAAD), Ground-based Midcourse Defense (GMD), and other (non-MDA) mission areas to include space situational awareness, technical intelligence, and battle space characterization.

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

The MDSDC continues to develop and refine on-orbit operations for the STSS-D satellites and NFIRE. In addition to satellite operations, the MDSDC hosts a collaborative experimentation environment via the MDSDC Interchange System (MIS) and the MDSDC Test Integration Lab (TIL) for BMDS elements that rely on, experiment with, integrate with, or seek to improve the BMDS capability by utilizing space-based, systems-derived data. The MIS provides a common, secure data architecture for MDA, Department of Defense and National Security Space sensor data and a satellite sensor tasking request tool interface with MDA users. The TIL provides a common location for MDA user collaboration with access to space sensor layer data via the MIS during tests and experiments. The MDSDC supports efforts to increase the effectiveness of the BMD System (including probability of engagement success, increase in defended area and raid size capacity, additional redundancy of architecture, unity of command) through the integration of MDA developed capabilities. The MDSDC Sensor Registration Health & Status Monitoring (SRHSM) Experiment addresses efforts such as Sensor Registration (reporting of sensor errors/biases) and Correlation (ensuring the information from multiple sensors seeing a threat relates to the same object). Other MDSDC experiments can explore areas from, System Track (creating a single engageable track of a threat from multiple reports provided by different land, sea, and space based multiple sensors), Discrimination (identifying object details to determine the target from debris or decoys), Battle Management (combining the best sensors and shooters to ensure the highest probability of a kill), Hit/Kill Assessment (determining if the target selected was destroyed after missile impact), to Communications (providing the worldwide connection of sensors and shooters to command authorities). These experiments are structured to be implemented across the Ballistic Missile Defense System (BMDS) elements to create and utilize system level data and decisions that allow Combatant Commanders the ability to automatically and manually optimize sensor coverage and interceptor inventory to defend against ballistic threats.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Missile Defense Space Development Center (MDSDC)</p> <p align="right">Articles:</p> <p>Description: The MDSDC provides a central collaborative environment to develop, operate, exploit, and integrate Joint Space Capabilities for BMDS.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Implemented measures to consolidate and increase efficiency in Space & Tracking Surveillance System Demonstration (STSS-D) Satellites and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations - Continued to provide infrastructure support for STSS-D Demonstration Satellites and NFIRE satellite on-orbit operations - Continued maturation of the STSS-D and NFIRE satellite on-orbit operations - Participated in cooperative tests with other Ballistic Missile Defense System (BMDS) elements to include planning, execution and analyses; performed data collection on other targets of opportunity - Used test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance -- An example of this was the STSS-D Object Sighting Messages fused in the Enterprise Sensors Laboratory (ESL) to produce system tracks. System tracks were used to provide precision cues to BMDS radars and enables interceptor quality fire control. - Provided core infrastructure support and conducted joint experiments with the ESL, Command and Control, Battle Management and Communications (C2BMC) X-Lab, and the Overhead Persistent Infrared (OPIR) Architecture (BOA) - Continued to support laser communications experiments to assess viability of the technology 	<p>7.940</p> <p>0</p>	<p>6.561</p> <p>0</p>	<p>6.173</p> <p>0</p>

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>		PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>- Continued to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Testing includes SM-3 intercept using STSS-D as a remote sensor -- STSS-D will provide to an Aegis 3.6.x or 4.0.1 ship the Quality of Service data track that will initiate a Remote Engagement Authorized (REA) launch of a Standard Missile-3 (SM-3) Block IB against an actual Medium-Range Ballistic Missile (MRBM) target - Continue maturation of the STSS-D and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations (NFIRE as health and utility permit) - Participate in tests outlined in the Integrated Master Test Plan with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity - Use test data, modeling and simulation, and integrated BMDS ground tests to demonstrate space-based infrared sensor contributions to BMDS performance -- An example of this is the STSS-D Object Sighting Messages fused in the Enterprise Sensors Laboratory (ESL) to produce system tracks. System tracks are used to provide precision cues to BMDS radars and enables interceptor quality fire control. - Provide core infrastructure support to enable joint experiments with the ESL; Command and Control, Battle Management and Communications (C2BMC) X-Lab; and the BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) - Continue to support laser communications experiments (as the NFIRE satellite's health and utility permit) to assess viability of the technology - Continue to support Air Force Space Command Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue efforts as listed under FY 2013 - Support Simulated Aegis (Hardware-in-the Loop (HWIL)) Engage-On Space & Tracking Surveillance System Demonstration (STSS-D) Satellites Tests and fulfillment of OPIR requests for STSS-D data based on satellite availability - Conduct analysis of space radiation environment and its influence on MDA space system performance - Conduct analysis of space based sensor data from STSS-D, NFIRE, and OPIR observations, both individually and combined, to identify phenomenology and techniques to aid future tracking and discrimination architectures - Support concept studies and analysis for alternative sensor payload configurations (e.g. hosted payloads) - Develop and integrate real time algorithms for dim target detection and tracking, discrimination support, hit assessment, and wideband IR sensor data integration and exploitation - Conduct algorithm development, performance assessments, architecture assessments, and concept evaluations of future MDA space layer options. 				
				FY 2013
				FY 2014

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Funding decrease from FY 2013 to FY 2014 is a result of continued efficiencies in satellite and on-orbit operations.			
Accomplishments/Planned Programs Subtotals	7.940	6.561	6.173

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
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	222.696	347.012	315.183		315.183	340.899	334.705	341.811	278.313	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
• 0603892C: <i>AEGIS BMD</i>	1,139.019	992.407	937.056		937.056	987.729	1,074.941	880.468	876.685	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	86.278	51.313	44.947		44.947	32.007	33.778	34.555	34.974	Continuing	Continuing
• 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
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	28.456	224.077	0.000		0.000	0.000	0.000	0.000	0.000	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
• 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
• 0603915C: <i>Ballistic Missile Defense Targets</i>	497.550	435.747	495.257		495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	75.097	297.375	0.000		0.000	0.000	0.000	0.000	0.000	0.000	372.472

Remarks

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>

D. Acquisition Strategy

Functions and operations of the Missile Defense Space Development Center (MDSDC) are currently financed through a 10-year MDSDC Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Services Contract. The sole-source contractor, Northrop Grumman Information Systems, is responsible for integrating Research, Development, Test and Evaluation (RDT&E), operations support, and resource and infrastructure management for the MDSDC, providing customer support, while achieving efficiencies through approaches that exceed customer requirements.

E. Performance Metrics

N/A

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Support (\$ 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
Missile Defense Space Development Center (MSDC) - Contract Support Services (CSS)	C/BPA	MDIOC, MDA:CO/AL	1.606	0.860		0.000		0.143	Oct 2013	-		0.143	Continuing	Continuing	Continuing
Missile Defense Space Development Center (MSDC) - MDA Civilian	Allot	MDA:AL	0.581	0.624		0.000		0.992	Oct 2013	-		0.992	Continuing	Continuing	Continuing
Subtotal			2.187	1.484		0.000		1.135		0.000		1.135			

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.

Management Services (\$ 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
Missile Defense Space Development Center (MSDC) - Space Dynamics Laboratory (SDL)	FFRDC	SDL:UT	2.121	1.112		1.156	Nov 2012	1.228	Nov 2013	-		1.228	Continuing	Continuing	Continuing
Subtotal			2.121	1.112		1.156		1.228		0.000		1.228			

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.

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

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			
Missile Defense Space Development Center (MSDC) - MSDC Support (JRDC Services Contract)	C/CPAF	MDIOC:CO	20.504	4.450		5.405	Dec 2012	3.810	Dec 2013	-		3.810	Continuing	Continuing	Continuing
Missile Defense Space Development Center (MSDC) - MSDC/Enterprise Sensors Laboratory (ESL) Experiments	MIPR	Various:Various	5.301	0.894		0.000		0.000		-		0.000	0.000	6.195	6.007
Subtotal			25.805	5.344		5.405		3.810		0.000		3.810			

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.

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			
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	30.113	7.940	6.561	6.173	0.000	6.173			

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.

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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
NFIRE - Targets of Opportunity - 1Q2012	▲																											
NFIRE LCT Experiments/Operations - 1Q2012	▲																											
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2012	▲																											
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements	●																											
STSS Demonstration Satellites Operations - 1Q2012-4Q2012	✦	✦	✦	✦																								
NFIRE Satellite Operations-1Q2012-4Q2012	✦	✦	✦	✦																								
Mission Planning, Tasking and Analysis - 1Q2012-4Q2012	✦	✦	✦	✦																								
STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) OPIR Cueing Experiments-1Q2012-4Q2012	✦	✦	✦	✦																								
STSS Sensor Registration Health & Status Experiments-1Q2012-4Q2012	✦	✦	✦	✦																								
MDSDC TIL Operations - 1Q2012-4Q2012	✦	✦	✦	✦																								
STSS/ESL-BOA Midcourse Tracking Experiments-1Q2012-4Q2012	✦	✦	✦	✦																								
MDSDC Interchange System (MIS) Operations - 1Q2012-4Q2012	✦	✦	✦	✦																								
NFIRE - Targets of Opportunity - 2Q2012		▲																										
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2012		▲																										
NFIRE - Targets of Opportunity - 3Q2012			▲																									
Aegis Intercept Flight Test (FTM-16 E2a)			◆																									
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test			◇																									
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 SM-3 Block 1B engagement of a Short-Range Ballistic Missile (SRBM) target, STSS Engage on Remote Shadow Mode			◆																									

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2012			▲																									
ESL Engineering Baseline Release (7.1/7.2)			▲																									
NFIRE LCT Experiments/Operations - 4Q2012			▲																									
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block IB missile, STSS Launch on Remote Shadow Mode			◇																									
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a			○																									
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2012			▲																									
NFIRE - Targets of Opportunity - 4Q2012			▲																									
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets			●																									
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013			▲																									
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013					✦	✦	✦	✦																				
MIS Operations - 1Q2013-4Q2013					✦	✦	✦	✦																				
MDSDC TIL Operations - 1Q2013-4Q2013					✦	✦	✦	✦																				
STSS Demonstration Satellites Operations - 1Q2013-4Q2013					✦	✦	✦	✦																				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2013					△																							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2013						△																						
Aegis Simulated Intercept Flight Test (FTM-21E2): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs						◇																						
Aegis Intercept Flight Test (FTM-21E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM						◇																						

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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
Aegis Simulated Intercept Flight Test (FTM-21E1): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs								◆																				
Aegis Intercept Flight Test (FTM-22E2): Aegis 4.0.1 SM-3 Block IB intercept of a SRBM								◆																				
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile targets								○																				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013								△																				
Aegis Flight Test (SCDPTV-01): Demonstrate safe launch and egress from canister and VLS of SM-3 Blk IIA												△																
Aegis Simulated Intercept Flight Test (FTX-20): Aegis 4.0.1 SM-3 Block IB simulated engagement of an advanced technology medium range ballistic missile												△																
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014												△																
MDSDC TIL Operations - 1Q2014-4Q2014												✦✦✦✦																
MIS Operations - 1Q2014-4Q2014												✦✦✦✦																
Mission Planning, Tasking and Analysis - 1Q2014-4Q2014												✦✦✦✦																
STSS Demonstration Satellites Operations - 1Q2014-4Q2014												✦✦✦✦																
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-02): GM 3-stage GBI with CE-II EKV demonstration flight test												△																
Aegis Simulated Intercept Flight Test (FTX-18): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs												△																
Aegis Intercept Flight Test (FTX-19): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM												△																

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014											△																	
Aegis Ashore Flight Test (AA CVT-01)											△																	
Aegis Intercept Flight Test (FTM-23): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile											△																	
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014											△																	
Aegis Flight Test (FTM-23): Aegis BMD 5.0 SM-3 Blk IB engagement of a MRBM with remote engagements authorized											△																	
Ground-based Midcourse Defense Intercept Flight Test (FTG-09): GM 3-stage GBI with CE-II EKV engagement of an IRBM with countermeasures													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014												△																
Aegis Flight Test, Standard Missile (FTM-24) Aegis BMD 4.0.1 SM-3 Blk IB engagement of an MRBM												△																
Aegis Flight Test (FTM-26): Aegis BMD 5.0 CU SM-3 Blk IB engagement of a SRBM with countermeasures													△															
Aegis Ashore Intercept Flight Test (AA FTM-01)													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015													△															
Aegis Flight Test (FTX-21): Aegis BMD 5.0 CU SBT-1 simulated engagement of a MRBM													△															
Aegis Ashore Intercept Flight Test (AA FTM-02)													△															
Aegis Flight Test (FTM-25): Aegis BMD 5.0 CU SM-3 Blk IB multiple simultaneous engagement of two SRBMs in a raid scenario													△															
MIS Operations - 1Q2015-4Q2015														✦	✦	✦	✦											
Mission Planning, Tasking and Analysis - 1Q2015-4Q2015														✦	✦	✦	✦											

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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
STSS Demonstration Satellites Operations - 1Q2015-4Q2015													✦	✦	✦	✦												
MDSDC TIL Operations - 1Q2015-4Q2015													✦	✦	✦	✦												
Aegis SM-3 Cooperative Development Flight Test (SCDCTV-01): Aegis BMD 5.1 SM-3 Blk IIA controlled test vehicle performance test													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015													△															
Ground-based Midcourse Defense Flight Test (FTX-22): GM simulated engagement of an IRBM with countermeasures (Cobra Dane)													△															
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM													△															
Aegis Flight Test (FTM-27): Aegis BMD 5.0 CU SBT-1 salvo engagement of a MRBM													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015														△														
Ground-based Midcourse Defense Intercept Flight Test (FTG-11 Salvo): GM 3-stage GBI EKV CE-I/II salvo engagement of an ICBM														△														
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-02): BMDS operational flight test engagement of SRBM, MRBM, and IRBM threats using regional/theater BMDS architecture														△														
Aegis SM-3 Cooperative Development Flight Test (SCDCTV-02): Aegis BMD 5.1 SM-3 Blk IIA controlled test vehicle performance test														△														
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016															△													
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016																✦	✦	✦	✦									

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>

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

	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
STSS Demonstration Satellites Operations - 1Q2016-4Q2016															✦	✦	✦	✦										
MIS Operations - 1Q2016-4Q2016															✦	✦	✦	✦										
MDSDC TIL Operations - 1Q2016-4Q2016															✦	✦	✦	✦										
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016																△												
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016																△												
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016																	△											
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017																			△									
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017																			✦	✦	✦	✦						
STSS Demonstration Satellites Operations - 1Q2017-4Q2017																			✦	✦	✦	✦						
MIS Operations - 1Q2017-4Q2017																			✦	✦	✦	✦						
MDSDC TIL Operations - 1Q2017-4Q2017																			✦	✦	✦	✦						
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2017																				△								
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2017																					△							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2017																						△						
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2018																							△					
MIS Operations - 1Q2018-4Q2018																								✦	✦	✦	✦	
STSS Demonstration Satellites Operations - 1Q2018-4Q2018																									✦	✦	✦	✦
MDSDC TIL Operations - 1Q2018-4Q2018																										✦	✦	✦
Mission Planning, Tasking and Analysis - 1Q2018-4Q2018																										✦	✦	✦
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2018																										△		
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2018																											△	

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</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 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				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2018																																

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NFIRE - Targets of Opportunity - 1Q2012	1	2012	1	2012
NFIRE LCT Experiments/Operations - 1Q2012	1	2012	1	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2012	1	2012	1	2012
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements	1	2012	1	2012
STSS Demonstration Satellites Operations - 1Q2012-4Q2012	1	2012	4	2012
NFIRE Satellite Operations-1Q2012-4Q2012	1	2012	4	2012
Mission Planning, Tasking and Analysis - 1Q2012-4Q2012	1	2012	4	2012
STSS/ESL-BMDS Overhead Persistent Infrared (OPIR) Architecture (BOA) OPIR Cueing Experiments-1Q2012-4Q2012	1	2012	4	2012
STSS Sensor Registration Health & Status Experiments-1Q2012-4Q2012	1	2012	4	2012
MDSDC TIL Operations - 1Q2012-4Q2012	1	2012	4	2012
STSS/ESL-BOA Midcourse Tracking Experiments-1Q2012-4Q2012	1	2012	4	2012
MDSDC Interchange System (MIS) Operations - 1Q2012-4Q2012	1	2012	4	2012
NFIRE - Targets of Opportunity - 2Q2012	2	2012	2	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2012	2	2012	2	2012
NFIRE - Targets of Opportunity - 3Q2012	3	2012	3	2012
Aegis Intercept Flight Test (FTM-16 E2a)	3	2012	3	2012
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test	3	2012	3	2012
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 SM-3 Block 1B engagement of a Short-Range Ballistic Missile (SRBM) target, STSS Engage on Remote Shadow Mode	3	2012	3	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2012	3	2012	3	2012

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
ESL Engineering Baseline Release (7.1/7.2)	4	2012	4	2012
NFIRE LCT Experiments/Operations - 4Q2012	4	2012	4	2012
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block IB missile, STSS Launch on Remote Shadow Mode	4	2012	4	2012
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a	4	2012	4	2012
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2012	4	2012	4	2012
NFIRE - Targets of Opportunity - 4Q2012	4	2012	4	2012
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets	1	2013	1	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013	1	2013	1	2013
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013	1	2013	4	2013
MIS Operations - 1Q2013-4Q2013	1	2013	4	2013
MDSDC TIL Operations - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites Operations - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2013	2	2013	2	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2013	3	2013	3	2013
Aegis Simulated Intercept Flight Test (FTM-21E2): Aegis 4.0.1 (two ships) Standard Missile-3 (SM-3) Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Intercept Flight Test (FTM-21E3): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM	3	2013	3	2013
Aegis Simulated Intercept Flight Test (FTM-21E1): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs	3	2013	3	2013
Aegis Intercept Flight Test (FTM-22E2): Aegis 4.0.1 SM-3 Block IB intercept of a SRBM	3	2013	3	2013
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile targets	3	2013	3	2013

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013	4	2013	4	2013
Aegis Flight Test (SCDPTV-01): Demonstrate safe launch and egress from canister and VLS of SM-3 Blk IIA	1	2014	1	2014
Aegis Simulated Intercept Flight Test (FTX-20): Aegis 4.0.1 SM-3 Block IB simulated engagement of an advanced technology medium range ballistic missile	1	2014	1	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014	1	2014	1	2014
MDSDC TIL Operations - 1Q2014-4Q2014	1	2014	4	2014
MIS Operations - 1Q2014-4Q2014	1	2014	4	2014
Mission Planning, Tasking and Analysis - 1Q2014-4Q2014	1	2014	4	2014
STSS Demonstration Satellites Operations - 1Q2014-4Q2014	1	2014	4	2014
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-02): GM 3-stage GBI with CE-II EKV demonstration flight test	2	2014	2	2014
Aegis Simulated Intercept Flight Test (FTX-18): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three SRBMs	2	2014	2	2014
Aegis Intercept Flight Test (FTX-19): Aegis 4.0.1 SM-3 Block IB salvo engagement of SRBM	2	2014	2	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014	2	2014	2	2014
Aegis Ashore Flight Test (AA CVT-01)	3	2014	3	2014
Aegis Intercept Flight Test (FTM-23): Aegis 5.0 intercept of Medium-Range Ballistic Missile (MRBM) target with SM-3 Block IB missile	3	2014	3	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014	3	2014	3	2014
Aegis Flight Test (FTM-23): Aegis BMD 5.0 SM-3 Blk IB engagement of a MRBM with remote engagements authorized	3	2014	3	2014
Ground-based Midcourse Defense Intercept Flight Test (FTG-09): GM 3-stage GBI with CE-II EKV engagement of an IRBM with countermeasures	4	2014	4	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014	4	2014	4	2014

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Flight Test, Standard Missile (FTM-24) Aegis BMD 4.0.1 SM-3 Blk IB engagement of an MRBM	4	2014	4	2014
Aegis Flight Test (FTM-26): Aegis BMD 5.0 CU SM-3 Blk IB engagement of a SRBM with countermeasures	1	2015	1	2015
Aegis Ashore Intercept Flight Test (AA FTM-01)	1	2015	1	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015	1	2015	1	2015
Aegis Flight Test (FTX-21): Aegis BMD 5.0 CU SBT-1 simulated engagement of a MRBM	1	2015	1	2015
Aegis Ashore Intercept Flight Test (AA FTM-02)	1	2015	1	2015
Aegis Flight Test (FTM-25): Aegis BMD 5.0 CU SM-3 Blk IB multiple simultaneous engagement of two SRBMs in a raid scenario	1	2015	1	2015
MIS Operations - 1Q2015-4Q2015	1	2015	4	2015
Mission Planning, Tasking and Analysis - 1Q2015-4Q2015	1	2015	4	2015
STSS Demonstration Satellites Operations - 1Q2015-4Q2015	1	2015	4	2015
MDSDC TIL Operations - 1Q2015-4Q2015	1	2015	4	2015
Aegis SM-3 Cooperative Development Flight Test (SCDCTV-01): Aegis BMD 5.1 SM-3 Blk IIA controlled test vehicle performance test	2	2015	2	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015	2	2015	2	2015
Ground-based Midcourse Defense Flight Test (FTX-22): GM simulated engagement of an IRBM with countermeasures (Cobra Dane)	3	2015	3	2015
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM	3	2015	3	2015
Aegis Flight Test (FTM-27): Aegis BMD 5.0 CU SBT-1 salvo engagement of a MRBM	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015	4	2015	4	2015
Ground-based Midcourse Defense Intercept Flight Test (FTG-11 Salvo): GM 3-stage GBI EKV CE-I/II salvo engagement of an ICBM	4	2015	4	2015

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis/THAAD/Patriot Multiple Engagement Flight Test (FTO-02): BMDS operational flight test engagement of SRBM, MRBM, and IRBM threats using regional/theater BMDS architecture	4	2015	4	2015
Aegis SM-3 Cooperative Development Flight Test (SCDCTV-02): Aegis BMD 5.1 SM-3 Blk IIA controlled test vehicle performance test	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016	1	2016	1	2016
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites Operations - 1Q2016-4Q2016	1	2016	4	2016
MIS Operations - 1Q2016-4Q2016	1	2016	4	2016
MDSDC TIL Operations - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016	2	2016	2	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016	3	2016	3	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016	4	2016	4	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017	1	2017	1	2017
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017	1	2017	4	2017
STSS Demonstration Satellites Operations - 1Q2017-4Q2017	1	2017	4	2017
MIS Operations - 1Q2017-4Q2017	1	2017	4	2017
MDSDC TIL Operations - 1Q2017-4Q2017	1	2017	4	2017
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2017	2	2017	2	2017
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2017	3	2017	3	2017
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2017	4	2017	4	2017
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2018	1	2018	1	2018
MIS Operations - 1Q2018-4Q2018	1	2018	4	2018
STSS Demonstration Satellites Operations - 1Q2018-4Q2018	1	2018	4	2018
MDSDC TIL Operations - 1Q2018-4Q2018	1	2018	4	2018
Mission Planning, Tasking and Analysis - 1Q2018-4Q2018	1	2018	4	2018

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD33: <i>MD Space Exp Center (MDSEC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2018	2	2018	2	2018
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2018	3	2018	3	2018
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2018	4	2018	4	2018

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD40: <i>Program-Wide Support</i>
---	---	---

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>	-	0.000	0.351	0.342	-	0.342	0.317	0.365	0.409	0.406	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	0.000	0.351	0.342
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
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	0.000	0.351	0.342

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT 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		

UNCLASSIFIED

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 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	PROJECT MD40: <i>Program-Wide Support</i>
---	---	---

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		0.351	Jun 2013	0.342	Jun 2014	-		0.342	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.351		0.342		0.000		0.342			

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	0.351	0.342	0.000	0.342			

Remarks
N/A