

UNCLASSIFIED

**Department of Defense
Fiscal Year (FY) 2014 President's Budget Submission**

April 2013



Missile Defense Agency

Justification Book Volume 2a of 2

Research, Development, Test & Evaluation, Defense-Wide

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Table of Volumes

Defense Advanced Research Projects Agency.....	Volume 1
Missile Defense Agency.....	Volume 2
Office of the Secretary of Defense.....	Volume 3
Chemical and Biological Defense Programs.....	Volume 4
Defense Contract Management Agency.....	Volume 5
Defense Human Resources Activity.....	Volume 5
Defense Information Systems Agency.....	Volume 5
Defense Logistics Agency.....	Volume 5
Defense Security Cooperation Agency.....	Volume 5
Defense Security Service.....	Volume 5
Defense Technical Information Center.....	Volume 5
Defense Threat Reduction Agency.....	Volume 5
The Joint Staff.....	Volume 5
U.S. Special Operations Command.....	Volume 5
Washington Headquarters Service.....	Volume 5
Operational Test and Evaluation.....	Volume 5

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

- Defense Geospatial Intelligence Agency..... (see NIP and MIP Justification Books)**
- Defense Intelligence Agency..... (see NIP and MIP Justification Books)**
- National Security Agency.....(see NIP and MIP Justification Books)**

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Volume 2a Table of Contents

Introduction and Explanation of Contents.....Volume 2a - v

Comptroller Exhibit R-1..... Volume 2a - vii

Program Element Table of Contents (by Budget Activity then Line Item Number).....Volume 2a - ix

Program Element Table of Contents (Alphabetically by Program Element Title).....Volume 2a - xiii

Missile Defense Agency Overview..... Volume 2a - xv

Appropriation Summary - MDA.....Volume 2a - xxiii

Congressional Reporting Requirements.....Volume 2a - xxvii

Program Assessment Rating Tool.....Volume 2a - xxxvii

Acronyms..... Volume 2a - xxxix

Exhibit R-2's..... Volume 2a - 1

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Introduction & Explanation of Contents

The Department of Defense FY2014 President's Budget RDT&E (Includes Procurement, O&M, and MILCON), Defense-wide Volume 2, Missile Defense Agency (MDA) justification materials consists of two books titled Volume 2a and 2b. Justification documents are provided in the books as listed below.

Volume 2a

- R-1 Comptroller Exhibit
- MDA FY 2014 Budget Estimate Overview
- MDA Appropriation Summary
- Congressional Reporting Requirements
- Program Assessment Rating Tool (PART) Submission
- Acronyms
- RDT&E Exhibits in BA-03, BA-04, and BA-06

Volume 2b

- P-1 Comptroller Exhibit
- MDA Operation and Maintenance Exhibit
- MDA MILCON Exhibits
- MDA Procurement Exhibits

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Defense-Wide
 FY 2014 President's Budget
 Exhibit R-1 FY 2014 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

22 Mar 2013

Appropriation: 0400D Research, Development, Test & Eval, DW

Program Line Element No Number	Item	Act	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base	S e c
32 0603175C	Ballistic Missile Defense Technology	03	67,921	79,975			79,975	309,203	U
36 0603274C	Special Program - MDA Technology	03	61,371	36,685			36,685	40,426	U
67 0603901C	Directed Energy Research	03	49,563	46,944			46,944		U
68 0603902C	Next Generation Aegis Missile	03	28,456	224,077			224,077		U
Advanced Technology Development			207,311	387,681			387,681	349,629	
81 0603881C	Ballistic Missile Defense Terminal Defense Segment	04	381,041	316,929			316,929	268,990	U
82 0603882C	Ballistic Missile Defense Midcourse Defense Segment	04	1,143,313	903,172			903,172	1,033,903	U
84 0603884C	Ballistic Missile Defense Sensors	04	222,696	347,012			347,012	315,183	U
85 0603888C	Ballistic Missile Defense Test & Targets	04	88,162						U
86 0603890C	BMD Enabling Programs	04	404,311	362,711			362,711	377,605	U
87 0603891C	Special Programs - MDA	04	287,056	272,387			272,387	286,613	U
88 0603892C	AEGIS BMD	04	1,139,019	992,407			992,407	937,056	U
89 0603893C	Space Tracking & Surveillance System	04	86,278	51,313			51,313	44,947	U
90 0603895C	Ballistic Missile Defense System Space Programs	04	7,940	6,912			6,912	6,515	U
91 0603896C	Ballistic Missile Defense Command and Control, Battle Management and Communicati	04	356,900	366,552			366,552	418,355	U
92 0603898C	Ballistic Missile Defense Joint Warfighter Support	04	36,684	55,550			55,550	47,419	U
93 0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	58,970	63,043			63,043	52,131	U
94 0603906C	Regarding Trench	04	15,075	11,371			11,371	13,864	U

R-1C: FY 2014 President's Budget (Published Version), as of March 22, 2013 at 08:55:46

* Reflects the FY 2013 President's Budget with an undistributed adjustment to match the Annualized Continuing Resolution funding level by appropriation.

UNCLASSIFIED

Defense-Wide
 FY 2014 President's Budget
 Exhibit R-1 FY 2014 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

22 Mar 2013

Appropriation: 0400D Research, Development, Test & Eval, DW

Line No	Program Element Number	Item	Act	FY 2012 (Base & OCO)	FY 2013 Base Request with CR Adj*	FY 2013 OCO Request with CR Adj*	Emergency Disaster Relief Act of 2013	FY 2013 Total Request with CR Adj*	FY 2014 Base	S e c
95	0603907C	Sea Based X-Band Radar (SBX)	04	183,506	9,730			9,730	44,478	U
96	0603913C	Israeli Cooperative Programs	04	235,655	99,836			99,836	95,782	U
97	0603914C	Ballistic Missile Defense Test	04	484,838	454,400			454,400	375,866	U
98	0603915C	Ballistic Missile Defense Targets	04	497,550	435,747			435,747	495,257	U
111	0604880C	Land-Based SM-3 (LBSM3)	04	299,012	276,338			276,338	129,374	U
112	0604881C	AEGIS SM-3 Block IIA Co-Development	04	457,529	420,630			420,630	308,522	U
113	0604883C	Precision Tracking Space System	04	75,097	297,375			297,375		U
114	0604886C	Advanced Remote Sensor Technology (ARST)	04		58,742			58,742		U
116	0305103C	Cyber Security Initiative	04						946	U
		Advanced Component Development And Prototypes		6,460,632	5,802,157			5,802,157	5,252,806	
154	0605502C	Small Business Innovation Research - MDA	06	89,963						U
179	0901598C	Management HQ - MDA	06	28,824	34,855			34,855	37,712	U
		Management Support		118,787	34,855			34,855	37,712	
Total Research, Development, Test & Eval, DW				6,786,730	6,224,693			6,224,693	5,640,147	

R-1C: FY 2014 President's Budget (Published Version), as of March 22, 2013 at 08:55:46

* Reflects the FY 2013 President's Budget with an undistributed adjustment to match the Annualized Continuing Resolution funding level by appropriation.

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Program Element Table of Contents (by Budget Activity then Line Item Number)

Budget Activity 03: Advanced Technology Development (ATD)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
32	03	0603175C	Ballistic Missile Defense Technology.....	Volume 2a - 1
36	03	0603274C	Special Program - MDA Technology.....	Volume 2a - 23
67	03	0603901C	Directed Energy Research.....	Volume 2a - 25
68	03	0603902C	Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB)).....	Volume 2a - 31

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
81	04	0603881C	Ballistic Missile Defense Terminal Defense Segment.....	Volume 2a - 37
82	04	0603882C	Ballistic Missile Defense Midcourse Defense Segment.....	Volume 2a - 75
84	04	0603884C	Ballistic Missile Defense Sensors.....	Volume 2a - 127
85	04	0603888C	Ballistic Missile Defense Test & Targets.....	Volume 2a - 169
86	04	0603890C	BMD Enabling Programs.....	Volume 2a - 189

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Budget Activity 04: Advanced Component Development & Prototypes (ACD&P)
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
87	04	0603891C	Special Programs - MDA.....	Volume 2a - 337
88	04	0603892C	AEGIS BMD.....	Volume 2a - 339
89	04	0603893C	Space Tracking and Surveillance System.....	Volume 2a - 397
90	04	0603895C	Ballistic Missile Defense System Space Programs.....	Volume 2a - 427
91	04	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication.....	Volume 2a - 453
92	04	0603898C	Ballistic Missile Defense Joint Warfighter Support.....	Volume 2a - 507
93	04	0603904C	Missile Defense Integration and Operations Center (MDIOC).....	Volume 2a - 551
94	04	0603906C	Regarding Trench.....	Volume 2a - 589
95	04	0603907C	Sea Based X-Band Radar (SBX).....	Volume 2a - 591
96	04	0603913C	Israeli Cooperative Programs.....	Volume 2a - 609
97	04	0603914C	Ballistic Missile Defense Test.....	Volume 2a - 633
98	04	0603915C	Ballistic Missile Defense Targets.....	Volume 2a - 667
111	04	0604880C	Land Based SM-3 (LBSM3).....	Volume 2a - 703
112	04	0604881C	AEGIS SM-3 Block IIA Co-Development.....	Volume 2a - 729
113	04	0604883C	Precision Tracking Space System.....	Volume 2a - 751
114	04	0604886C	Advanced Remote Sensor Technology (ARST).....	Volume 2a - 765
116	04	0305103C	Cyber Security Initiative.....	Volume 2a - 777

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Budget Activity 06: RDT&E Management Support
Appropriation 0400: Research, Development, Test & Evaluation, Defense-Wide

.....

Line Item	Budget Activity	Program Element Number	Program Element Title	Page
154	06	0605502C	Small Business Innovative Research - MDA.....	Volume 2a - 781
179	06	0901598C	Management HQ - MDA.....	Volume 2a - 787

UNCLASSIFIED

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Program Element Table of Contents (Alphabetically by Program Element Title)

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
AEGIS BMD	0603892C	88	04.....	Volume 2a - 339
AEGIS SM-3 Block IIA Co-Development	0604881C	112	04.....	Volume 2a - 729
Advanced Remote Sensor Technology (ARST)	0604886C	114	04.....	Volume 2a - 765
BMD Enabling Programs	0603890C	86	04.....	Volume 2a - 189
Ballistic Missile Defense Command and Control, Battle Management & Communication	0603896C	91	04.....	Volume 2a - 453
Ballistic Missile Defense Joint Warfighter Support	0603898C	92	04.....	Volume 2a - 507
Ballistic Missile Defense Midcourse Defense Segment	0603882C	82	04.....	Volume 2a - 75
Ballistic Missile Defense Sensors	0603884C	84	04.....	Volume 2a - 127
Ballistic Missile Defense System Space Programs	0603895C	90	04.....	Volume 2a - 427
Ballistic Missile Defense Targets	0603915C	98	04.....	Volume 2a - 667
Ballistic Missile Defense Technology	0603175C	32	03.....	Volume 2a - 1
Ballistic Missile Defense Terminal Defense Segment	0603881C	81	04.....	Volume 2a - 37
Ballistic Missile Defense Test	0603914C	97	04.....	Volume 2a - 633
Ballistic Missile Defense Test & Targets	0603888C	85	04.....	Volume 2a - 169
Cyber Security Initiative	0305103C	116	04.....	Volume 2a - 777
Directed Energy Research	0603901C	67	03.....	Volume 2a - 25

UNCLASSIFIED

UNCLASSIFIED

Missile Defense Agency • President's Budget Submission FY 2014 • RDT&E Program

Program Element Title	Program Element Number	Line Item	Budget Activity	Page
Israeli Cooperative Programs	0603913C	96	04.....	Volume 2a - 609
Land Based SM-3 (LBSM3)	0604880C	111	04.....	Volume 2a - 703
Management HQ - MDA	0901598C	179	06.....	Volume 2a - 787
Missile Defense Integration and Operations Center (MDIOC)	0603904C	93	04.....	Volume 2a - 551
Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	0603902C	68	03.....	Volume 2a - 31
Precision Tracking Space System	0604883C	113	04.....	Volume 2a - 751
Regarding Trench	0603906C	94	04.....	Volume 2a - 589
Sea Based X-Band Radar (SBX)	0603907C	95	04.....	Volume 2a - 591
Small Business Innovative Research - MDA	0605502C	154	06.....	Volume 2a - 781
Space Tracking and Surveillance System	0603893C	89	04.....	Volume 2a - 397
Special Program - MDA Technology	0603274C	36	03.....	Volume 2a - 23
Special Programs - MDA	0603891C	87	04.....	Volume 2a - 337

UNCLASSIFIED

Missile Defense Agency

Fiscal Year (FY) 2014

Budget Estimates

Overview



Approved For Public Release
13-MDA-7208 (27 MARCH 2013)

THIS PAGE INTENTIONALLY LEFT BLANK

Missile Defense

MDA is requesting \$7.684 billion in FY 2014 to continue development and deployment of the Ballistic Missile Defense System (BMDS) to enhance protection of the U.S. homeland and to expand regional defense for our deployed forces, allies, and partners.

In the 2010 Ballistic Missile Defense Review (BMDR) Report the Secretary of Defense established the President's six policy priorities:

1. The United States will continue to defend the homeland against the threat of limited ballistic missile attack.
2. The United States will defend against regional missile threats to U.S. forces, while protecting allies and partners and enabling them to defend themselves.
3. Before new capabilities are deployed, they must undergo testing that enables assessment under realistic operational conditions.
4. The commitment to new capabilities must be fiscally sustainable over the long term.
5. U.S. BMD capabilities must be flexible enough to adapt as threats change.
6. The United States will seek to lead expanded international efforts for missile defense.

These policy guidelines continue to inform development of the BMDS. At the same time, the ballistic missile threat is increasing both quantitatively and qualitatively and is projected by the Intelligence Community to continue to do so over the next decade. To address the evolving threat, MDA has made three important changes to the BMDS in its FY 2014 President's Budget Submission.

First, we are supporting a Presidential and Department of Defense decision to implement the existing homeland defense hedge by increasing our operational fleet of Ground Based Interceptors (GBIs) from 30 to 44 to stay ahead of the growing threat from North Korea and Iran. We will start this new approach by requesting \$135 million in FY 2014 to initiate the refurbishment of Missile Field 1 at Fort Greely, Alaska.

We will reach a total of 44 operational GBIs in 2017 by re-allocating from the stockpile reliability, spares, and flight test program to the operational fleet. We plan to acquire 14 additional GBIs at a rate of two per year starting in FY 2016 to reset the stockpile reliability program, supply the testing program for annual interceptor tests, and add spares to maintain 44 operational GBIs.

This commitment to strengthen homeland defense also requires a successful return of the Ground-based Midcourse Defense program to flight testing with a successful intercept. This is our highest priority. In January 2013, the GBI returned to flight with a successful non-intercept flight test (CTV-01). In implementing a less concurrent technical approach for the CE-II program, we plan to execute a CTV-02 non-intercept flight test in second quarter 2014 followed by FTG-09 CE-II intercept test in fourth quarter 2014. These dates may be accelerated to a possible intercept mission as early as the end of CY 2013 once we are through analyzing the data from CTV-01. We are committed to retaining a robust test program prior to acquisition and production decisions, remaining consistent with a fly-before-buy approach. We plan to also conduct a CE-I intercept test in third quarter 2013 to validate reliability improvements made to the CE-I fleet over the last several years.

As directed by Section 227 of the FY 2013 National Defense Authorization Act, MDA is evaluating at least three locations in the United States to determine a site that would be best suited for a possible future deployment of interceptors capable of enhancing protection of the homeland from nations such as North Korea and Iran. MDA will conduct a siting study this year to inform development of the FY 2015 President's Budget Request. An Environmental Impact Statement (EIS) study is projected to be completed by early FY 2016. MDA is prepared to provide options for the Department to procure additional GBIs if future threat information leads to a decision to do so.

The Agency continues to improve GMD capabilities through incorporation of reliability and software improvements in its GBIs and through software updates and technology enhancements in all GMD ground systems, to include Fire Control and Command Launch Equipment. Further, the Agency continues to expand GMD battle space by leveraging improved sensor performance and architecture. The Agency will add an additional In-Flight Interceptor Communications System (IFICS) Data Terminal at Fort Drum, New York in FY 2015 to provide improved interceptor performance.

Second, the Department is focusing on Common Kill Vehicle technology and components for the Ground Based Interceptor and future SM-3 variants to improve our ability to address future threat advancements. We will investigate, build, and test key concepts such as high performance maneuvering propulsion, long range discriminating seekers, lightweight radiation-tolerant avionics, engagement management algorithms, non-proprietary software, models and simulation and, potentially, a volume kill payload. Consolidating these into one effort will provide the ability to better address emerging threats and increase protection of the homeland. A new high performance, high reliability, highly producible kill vehicle could be ready before the end of the decade, and is a continuation of the plan started in FY 2013 directed by Section 225 of the FY 2013 National Defense Authorization Act.

Third, the Department of Defense made the decision to terminate the Precision Tracking Space System (PTSS) program based on schedule risk and cost associated with the concurrent acquisition strategy. Long term fiscal sustainability of PTSS was determined to be unsupportable. A study has been initiated to determine how to best meet future sensor requirements, and we are exploring technologies to improve acquisition and discrimination capabilities of ground, air, and space sensors.

To maintain readiness of our networked strategic radars, MDA continues to work with the Air Force in upgrading the Early Warning Radar (EWR) at Clear, Alaska, to provide a missile defense capability and improved ballistic missile defense sensor coverage of the continental United States, while reducing sustainment and operating costs. The upgraded Clear EWR will be added to the BMDS operational baseline in FY 2017, followed by a Cape Cod EWR upgrade in FY 2018. In coordination with the Air Force, MDA plans to transfer the Beale (California), Fylingdales (United Kingdom), and Thule (Greenland) Upgraded EWRs to the Air Force in FY 2013, once all three radars are operating with the same software configuration. In partnership with the warfighter, MDA continues to maintain and integrate its world-wide Command, Control, Battle Management, and Communications (C2BMC) assets for homeland and regional missile defense.

Beginning in FY 2014, the Agency will focus Ballistic Missile Defense Technology efforts in the following six areas: Advanced Concepts and Performance Assessments, Discrimination Sensor Technology, Weapons Technology, Advanced C4ISR (Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance), Advanced Research, and Common Kill Vehicle Technology. We have increased our investment in Advanced Technology to enhance and improve the reliability of the BMDS, with a focus on identifying, acquiring, tracking and discriminating incoming threats. We intend to incrementally demonstrate this capability in the field, building our confidence in the technology and its benefits before we proceed to acquisition. MDA will also demonstrate the efficiency, producibility, and scaling potential of two candidate lasers, with a near-term goal of producing over 30 kilowatts at high efficiency in the laboratory. Our Advanced Technology efforts will also develop and mature technology to expand and enhance capability of our C2BMC and existing sensor networks.

This budget also supports the President's commitment to strengthening regional missile defense. We continue to work with allies around the world to develop capabilities and improve cooperation. Europe remains a key focus, and we will continue to support the European Phased Adaptive Approach (EPAA), which is the U.S. contribution to the territorial defense of Europe and also provides protection of deployed U.S. forces.

In 2011, the Department completed implementation of EPAA Phase I by deploying Aegis BMD ships and a land-based radar in Europe. Based on the success of two intercept tests of the SM-3 Block IB and Aegis BMD 4.0 Weapons System in FY 2012, Phase 2 is on schedule to deploy in the 2015 timeframe and will include the upgraded Aegis BMD Weapons System, for both at-sea and ashore capability, and will include deployment of the SM-3 Block IB guided missile. Phase 3 is scheduled to be complete in the 2018 timeframe and will deploy the SM-3 Block IIA variant, which is currently under development. With the completion of Phase 3, the BMDS will provide coverage for all European NATO territory and U.S forces in the region.

Because of changes in the assessment of the threat from North Korea to the U.S. homeland, as well as delays in the potential deployment of any SM-3 IIB interceptor due to budget reductions and technical challenges, the department is evaluating alternatives to hedge against future threat technology advancements and does not request funding for the SM-3 IIB program in FY2014. Our near-to-mid-term focus for homeland defense will be to increase capability of the Ground-based Midcourse Defense System, to include increasing deployed GBIs from 30 to 44, investing in Common Kill Vehicle technology, and conducting siting and EIS studies for a new U.S. GBI missile field.

This budget continues to fund procurement and delivery of SM-3 Block IB and THAAD interceptors; construction of an Aegis Ashore test facility at the Pacific Missile Range Facility by 2014 and two Aegis Ashore sites (Romania by 2015, Poland by 2018); operation and sustainment of the Command, Control, Battle Management, and Communications at fielded sites; and continuation of our SM-3 Block IIA co-development effort with the Japan Ministry of Defense.

MDA continues collaboration with Israel to develop and produce missile defense systems, including Arrow 3 and the David Sling Weapon System. MDA is also working with the Israel Missile Defense Organization to deliver Iron Dome batteries and interceptors. MDA is supporting acquisition of THAAD batteries by a number of U.S. Allies and partners in the Middle East region, including the United Arab Emirates, and pursuing future opportunities with other international partners in the region.

Working with independent testers and the Services, the Missile Defense Agency follows an Integrated Master Test Plan and continues a robust and cost-effective flight test program using operationally realistic conditions and warfighters to demonstrate BMD capabilities against current and emerging threats. In addition to the successful GBI non-intercept test (CTV-01), MDA also recently completed FTI-01, demonstrating regional BMDS ability to defend a raid of up to five near-simultaneous threats in an operationally relevant scenario; and FTM-20, an intercept test of an SM-3 Block IA missile and the Aegis 4.0 Weapons System in which the SM-3 was launched using mid-course fire control quality track data provided by Space Tracking Surveillance System-Demonstrator (STSS-D) satellites. This launch-on-remote demonstration using the commons of space for sensors in an integrated architecture expands BMDS capability and battle space by providing the ability for longer range intercepts and defense of larger areas. The results of FTM-20 will be included as an integral part of the previously mentioned sensor study initiated after the termination of PTSS.

The FY 2014 missile defense budget request balances capabilities and risks to deter aggression, protects U.S. and allied interests, responds to current warfighter requirements, and pursues cost- and operationally-effective capabilities to hedge against future threats. To advance the Administration's BMD priorities, the FY 2014 Missile Defense Agency's request for BMD programs is \$7.684 billion.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**Missile Defense Agency
Fiscal Year 2014-2018 President's Budget
FY 2014 through FY 2018 Appropriation Summary
(\$ Thousands)**

Line Number	Program Element	Budget Project	Program	Budget Activity	FY12 Actual	FY13	FY14	FY15	FY16	FY17	FY18	FY14-18
Operations & Maintenance												
011A	0208866C		O&M	NA	201,735	259,975	256,201	288,477	314,696	301,788	310,165	1,471,327
		MD07	THAAD	NA	43,903	55,679	91,959	97,234	96,703	110,314	112,275	508,485
		MD09	AEGIS	NA	0	12,163	18,444	23,812	19,062	5,853	6,612	73,783
		MD11	BMDS AN/TPY-2 Radars	NA	157,832	192,133	145,798	167,431	198,931	185,621	191,278	889,059
			Budget Activity NA Total	NA	201,735	259,975	256,201	288,477	314,696	301,788	310,165	1,471,327
			Operations and Maintenance Total	NA	201,735	259,975	256,201	288,477	314,696	301,788	310,165	1,471,327
Procurement												
NA	0208866C		PROCUREMENT	NA	1,363,238	1,077,775	1,575,528	1,728,924	1,491,814	1,785,207	1,890,023	8,471,496
25		MD07	THAAD	NA	604,650	460,728	581,005	449,665	490,621	468,607	485,588	2,475,486
26		MD09	AEGIS BMD	NA	378,393	389,626	580,814	746,712	745,259	1,018,243	1,093,968	4,184,996
27		MD11	BMDS AN/TPY-2 Radars	NA	380,195	217,244	62,000	80,250	21,000	35,000	35,000	233,250
28		MD73	Aegis Ashore Phase III	NA	0	0	131,400	256,325	38,574	63,884	71,600	561,783
29		MD77	Radar Spares	NA	0	10,177	0	0	0	0	0	0
30		MD83	Iron Dome	NA	0	0	220,309	175,972	0	0	0	396,281
		MD78	Aegis Spares	NA	0	0	0	20,000	46,360	46,473	47,867	160,700
		MD08	Ground Based Midcourse	NA	0	0	0	0	150,000	153,000	156,000	459,000
			Budget Activity NA Total	NA	1,363,238	1,077,775	1,575,528	1,728,924	1,491,814	1,785,207	1,890,023	8,471,496
			Procurement Total	NA	1,363,238	1,077,775	1,575,528	1,728,924	1,491,814	1,785,207	1,890,023	8,471,496
RDT&E												
32	0603175C		Ballistic Missile Defense Technology	3	67,921	79,975	309,203	212,715	220,185	220,732	220,373	1,183,208
		MD25	Advanced Technology	3	67,484	76,005	229,882	134,166	140,968	140,276	138,372	783,664
		MD85	Common Kill Vehicle	3	0	0	70,000	70,300	70,200	70,100	69,900	350,500
		MD40	Program Wide Support	3	437	3,970	9,321	8,249	9,017	10,356	12,101	49,044
36	0603274C		Special Program - MDA Technology	3	61,371	36,685	40,426	42,208	45,676	46,465	47,074	221,849
		MD81	Special Programs - MDA Technology	3	61,371	36,685	40,426	42,208	45,676	46,465	47,074	221,849
67	0603901C		Directed Energy Research	3	49,563	46,944	0	0	0	0	0	0
		MD69	Directed Energy Research	3	46,243	44,560	0	0	0	0	0	0
		MD40	Program-Wide Support	3	3,320	2,384	0	0	0	0	0	0
68	0603902C		Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	3	28,456	224,077	0	0	0	0	0	0
		MD70	Standard Missile-3 Block IIB (SM-3 IIB)	3	28,456	212,704	0	0	0	0	0	0
		MD40	Program-Wide Support	3	0	11,373	0	0	0	0	0	0
			Budget Activity 03 Total	3	207,311	387,681	349,629	254,923	265,861	267,197	267,447	1,405,057

Line Number	Program Element	Budget Project	Program	Budget Activity	FY12 Actual	FY13	FY14	FY15	FY16	FY17	FY18	FY14-18
81	0603881C		Ballistic Missile Defense Terminal Defense Segment	4	381,041	316,929	268,990	309,901	227,476	262,488	254,913	1,323,768
		MD07	THAAD	4	371,516	229,869	228,692	174,235	181,607	180,303	162,331	927,168
		MC07	Cyber Operations	4	0	0	530	539	548	557	574	2,748
		MT07	THAAD Test	4	0	70,928	24,547	118,946	32,415	65,559	76,563	318,030
		MD06	Patriot Advanced Capability-3 (PAC-3)	4	1,156	1,145	1,091	1,108	1,219	1,240	1,257	5,915
		MD40	Program-Wide Support	4	8,369	14,987	14,130	15,073	11,687	14,829	14,188	69,907
82	0603882C		Ballistic Missile Defense Midcourse Defense Segment	4	1,143,313	903,172	1,033,903	1,045,500	1,002,568	815,198	781,824	4,678,993
		MD08	Ground Based Midcourse	4	1,095,755	569,622	739,423	745,957	724,329	531,841	484,155	3,225,705
		MC08	Cyber Operations	4	0	0	2,124	2,126	2,129	2,132	2,135	10,646
		MT08	Ground Based Midcourse Test	4	0	80,381	98,895	98,074	73,442	74,986	87,036	432,433
		MX08	Ground Based Midcourse Development Support	4	0	207,133	142,856	152,208	155,397	163,185	170,067	783,713
		MD40	Program-Wide Support	4	47,558	46,036	50,605	47,135	47,271	43,054	38,431	226,496
84	0603884C		Ballistic Missile Defense Sensors	4	222,696	347,012	315,183	340,899	334,705	341,811	278,313	1,610,911
		MD11	BMDs Radars	4	213,384	257,656	236,637	209,844	229,794	252,073	163,323	1,091,671
		MC11	Cyber Operations	4	0	0	1,180	1,212	1,247	1,282	1,319	6,240
		MT11	BMDs Radars Test	4	0	72,388	62,045	114,979	89,319	72,749	100,327	439,419
		MD40	Program-Wide Support	4	9,312	16,968	15,321	14,864	14,345	15,707	13,344	73,581
85	0603888C		Ballistic Missile Defense Test & Targets	4	88,162	0	0	0	0	0	0	0
		MD05	Targets Program	4	88,162	0	0	0	0	0	0	0
86	0603890C		BMD Enabling Programs	4	404,311	362,711	377,605	406,983	434,661	476,444	601,286	2,296,979
		MD24	System Engineering & Integration	4	134,820	88,315	102,979	114,347	150,794	180,920	316,106	865,146
		MT23	Enabling - Test	4	0	32,386	42,850	65,609	41,407	37,078	35,661	222,605
		MD28	Intelligence & Security	4	18,937	36,886	32,161	32,194	34,323	33,939	35,542	168,159
		MD30	BMD Information Management Systems	4	120,313	107,744	92,488	97,019	94,893	105,198	91,517	481,115
		MC30	Cyber Operations	4	0	0	17,443	16,355	16,567	18,445	17,415	86,225
		MD31	Modeling & Simulation	4	50,181	46,608	41,223	32,667	45,358	47,073	51,083	217,404
		MD32	Quality, Safety, and Mission Assurance	4	28,528	34,388	30,140	30,905	32,006	31,834	31,949	156,834
		MD40	Program-Wide Support	4	51,532	16,384	18,321	17,887	19,313	21,957	22,013	99,491
87	0603891C		Special Programs - MDA	4	287,056	272,387	286,613	368,556	370,561	351,220	347,571	1,724,521
		MD27	Special Programs	4	287,056	272,387	286,613	368,556	370,561	351,220	347,571	1,724,521
88	0603892C		AEGIS BMD	4	1,139,019	992,407	937,056	987,729	1,074,941	880,468	876,685	4,756,879
		MD09	Aegis BMD	4	1,094,395	775,978	726,109	777,584	872,289	646,214	593,369	3,615,565
		MC09	Cyber Operations	4	0	0	260	264	269	273	281	1,347
		MT09	Aegis BMD Test	4	0	150,291	137,373	117,521	82,152	116,380	159,295	612,721
		MX09	Aegis BMD Development Support	4	4,427	15,588	23,963	44,883	67,185	73,515	82,641	292,187
		MD40	Program-Wide Support	4	40,197	50,550	49,351	47,477	53,046	44,086	41,099	235,059
89	0603893C		Space Tracking and Surveillance System	4	86,278	51,313	44,947	32,007	33,778	34,555	34,974	180,261
		MD12	Space Tracking and Surveillance System (STSS)	4	85,224	48,708	42,587	30,450	32,047	32,607	33,039	170,730
		MD40	Program-Wide Support	4	1,054	2,605	2,360	1,557	1,731	1,948	1,935	9,531
90	0603895C		Ballistic Missile Defense System Space Programs	4	7,940	6,912	6,515	6,522	7,128	7,289	7,378	34,832
		MD33	MD Space Exp Center (MDSEC)	4	7,940	6,561	6,173	6,205	6,763	6,880	6,972	32,993
		MD40	Program-Wide Support	4	0	351	342	317	365	409	406	1,839

Line Number	Program Element	Budget Project	Program	Budget Activity	FY12 Actual	FY13	FY14	FY15	FY16	FY17	FY18	FY14-18
91	0603896C		Ballistic Missile Defense Command and Control, Battle Management & Communication	4	356,900	366,552	418,355	433,470	454,452	461,991	451,947	2,220,215
		MD01	Command & Control, Battle Management, Communications (C2BMC)	4	285,826	194,367	245,129	251,253	273,981	284,174	271,341	1,325,878
		MC01	Cyber Operations	4	0	0	538	547	556	566	583	2,790
		MT01	C2BMC Test	4	0	59,189	54,280	60,328	54,355	48,127	57,999	275,089
		MX01	Command & Control, Battle Management, Communications (C2BMC) Development Support	4	58,525	94,394	96,257	100,261	102,242	103,085	96,970	498,815
		MD40	Program-Wide Support	4	12,549	18,602	22,151	21,081	23,318	26,039	25,054	117,643
92	0603898C		Ballistic Missile Defense Joint Warfighter Support	4	36,684	55,550	47,419	47,793	53,182	54,037	54,608	257,039
		MD03	Joint Warfighter Support	4	35,054	52,765	44,651	45,212	50,177	50,673	51,266	241,979
		MD40	Program-Wide Support	4	1,630	2,785	2,768	2,581	3,005	3,364	3,342	15,060
93	0603904C		Missile Defense Integration and Operations Center (MDIOC)	4	58,970	63,043	52,131	59,893	52,005	61,751	53,511	279,291
		MD22	Missile Defense Integration and Operations Center (MDIOC)	4	56,129	59,842	48,858	56,443	48,849	57,796	49,903	261,849
		MC22	Cyber Operations	4	0	0	535	537	482	472	635	2,661
		MD40	Program-Wide Support	4	2,841	3,201	2,738	2,913	2,674	3,483	2,973	14,781
94	0603906C		Regarding Trench	4	15,075	11,371	13,864	16,554	10,116	9,550	9,864	59,948
		MD35	Regarding Trench	4	15,075	11,371	13,864	16,554	10,116	9,550	9,864	59,948
95	0603907C		Sea Based X-Band Radar (SBX)	4	183,506	9,730	44,478	54,514	46,232	47,466	51,287	243,977
		MD46	Sea Based X-Band Radar (SBX) Development	4	32,680	0	0	0	0	0	0	0
		MX46	Sea Based X-Band Radar Development Support	4	143,570	9,236	42,143	51,864	43,863	44,803	48,463	231,136
		MD40	Program-Wide Support	4	7,256	494	2,335	2,650	2,369	2,663	2,824	12,841
96	0603913C		Israeli Cooperative Programs	4	235,655	99,836	95,782	96,803	103,940	106,020	107,929	510,474
		MD20	Israeli Upper Tier	4	66,220	50,892	52,607	54,368	55,660	56,773	57,795	277,203
		MD26	Israeli ARROW Program	4	58,910	10,665	10,663	10,701	11,142	11,365	11,570	55,441
		MD34	Short Range Ballistic Missile Defense (SRBMD)	4	110,525	38,279	32,512	31,734	37,138	37,882	38,564	177,830
97	0603914C		Ballistic Missile Defense Test	4	484,838	454,400	375,866	436,063	378,063	400,157	451,776	2,041,925
		MT04	BMD Test Program	4	443,919	431,847	354,715	415,009	358,751	377,801	427,224	1,933,500
		MC04	Cyber Operations	4	0	0	500	514	523	532	546	2,615
		MX04	BMD Test Development Support	4	33,758	0	0	0	0	0	0	0
		MD40	Program Wide Support	4	7,161	22,553	20,651	20,540	18,789	21,824	24,006	105,810
98	0603915C		Ballistic Missile Defense Targets	4	497,550	435,747	495,257	516,092	406,611	481,527	463,660	2,363,147
		MT05	BMD Targets Program	4	497,550	414,696	468,713	490,430	385,732	454,847	437,866	2,237,588
		MD40	Program Wide Support	4	0	21,051	26,544	25,662	20,879	26,680	25,794	125,559
111	0604880C		Land Based SM-3 (LBSM3)	4	299,012	276,338	129,374	124,547	51,927	55,808	32,938	394,594
		MD68	AEGIS Ashore	4	290,007	245,211	117,072	96,940	47,811	52,408	30,851	345,082
		MC68	Cyber Operations	4	0	0	242	251	255	260	264	1,272
		MT68	Aegis Ashore Test	4	0	17,100	5,130	21,300	1,200	0	0	27,630
		MD40	Program-Wide Support	4	9,005	14,027	6,930	6,056	2,661	3,140	1,823	20,610
112	0604881C		AEGIS SM-3 Block IIA Co-Development	4	457,529	420,630	308,522	230,466	128,743	41,014	0	708,745
		MD09	SM-3 Block IIA Co-Development	4	441,046	399,284	289,817	211,582	95,892	25,945	0	623,236
		MT09	SM-3 Block IIA Co-Development Test	4	0	0	2,303	7,680	26,254	12,768	0	49,005
		MD40	Program-Wide Support	4	16,483	21,346	16,402	11,204	6,597	2,301	0	36,504

Line Number	Program Element	Budget Project	Program	Budget Activity	FY12 Actual	FY13	FY14	FY15	FY16	FY17	FY18	FY14-18
113	0604883C		Precision Tracking Space System	4	75,097	297,375	0	0	0	0	0	0
		MD10	Precision Tracking Space System (PTSS)	4	73,598	282,283	0	0	0	0	0	0
		MD40	Program-Wide Support	4	1,499	15,092	0	0	0	0	0	0
114	0604886C		Advanced Remote Sensor Technology (ARST)	4	0	58,742	0	0	0	0	0	0
		MD95	Advanced Remote Sensor Technology	4	0	55,760	0	0	0	0	0	0
		MD40	Program-Wide Support	4	0	2,982	0	0	0	0	0	0
116	0305103C		Cyber Security Initiative	4	0	0	946	961	984	1,003	1,022	4,916
		MDCS	Cyber Security Initiative	4	0	0	946	961	984	1,003	1,022	4,916
Budget Activity 04 Total				4	6,460,632	5,802,157	5,252,806	5,515,253	5,172,073	4,889,797	4,861,486	25,691,415
154	0605502C		Small Business Innovative Research - MDA	6	89,963	0	0	0	0	0	0	0
		MD45	Small Business Innovative Research	6	89,963	0	0	0	0	0	0	0
179	0901598C		Management HQ - MDA	6	28,824	34,855	37,712	38,580	39,546	40,320	35,325	191,483
		MD38	Management Headquarters	6	28,824	34,855	37,712	38,580	39,546	40,320	35,325	191,483
Budget Activity 06 Total				6	118,787	34,855	37,712	38,580	39,546	40,320	35,325	191,483
RDT&E Total				6	6,786,730	6,224,693	5,640,147	5,808,756	5,477,480	5,197,314	5,164,258	27,287,955
MILCON												
			Major MILCON	NA	58,800	183,800	199,204	0	162,400	0	0	361,604
			IFFICS Data Terminal Cmplx, Ft. Drum NY	NA	0	25,900	0	0	0	0	0	0
			Mechanical-Electrical Bldg MF #1 Ft Greely, AK	NA	0	0	82,000	0	0	0	0	82,000
			BMDS UEWR, Clear AFS, AK	NA	0	0	17,204	0	0	0	0	17,204
			AN/TPY-2 Radar Site, PACOM	NA	0	0	15,000	0	0	0	0	15,000
			Aegis Ashore Missile Def Sys Cmplx, Romania	NA	0	157,900	85,000	0	0	0	0	85,000
			Aegis Ashore Missile Def Sys Cmplx, Poland	NA	0	0	0	0	162,400	0	0	162,400
			VON BRAUN COMPLEX PHASE IV MAJOR CONSTRUCTION	NA	58,800	0	0	0	0	0	0	0
			Minor MILCON	NA	0	0	2,000	3,501	3,763	3,838	2,572	15,674
				NA	0	0	2,000	3,501	3,763	3,838	2,572	15,674
			MILCON Planning and Design	NA	8,368	4,548	10,891	8,203	6,279	6,547	8,000	39,920
				NA	8,368	4,548	10,891	8,203	6,279	6,547	8,000	39,920
			MILCON Total	NA	67,168	188,348	212,095	11,704	172,442	10,385	10,572	417,198
			Program Total		8,418,871	7,750,791	7,683,971	7,837,861	7,456,432	7,294,694	7,375,018	37,647,976

Missile Defense Agency Congressional Reporting Requirements

Reporting Requirement Reference	Reporting Requirement Language	Budget Documentation
<p>H.R. 4310 H. Rpt 112-479 FY13 House Armed Services Committee Report pp. 100-101</p>	<p>REPORT ON FRAGILITY IN THE MISSILE DEFENSE INDUSTRIAL BASE</p> <p>The committee is concerned about the impact of budget cuts on the missile defense industrial base, as it is concerned about the overall defense industrial base. In testimony before the Sub-committee on Strategic Forces on the fiscal year 2013 budget request for missile defense, the Director, Missile Defense Agency (MDA) stated: “If we have sequestration and the dramatic reduction in our programs, it will be most – hardest-felt in the supplier base. And it’s not only the availability of supplies, as we were discussing before, it’s the manufacturing processes. And, a lot of these components that we use, we use over 2,000 for example, on a ground-based interceptor, those components themselves are built in a certain way that give it its reliability. And, the loss of the workforce in many of these cases I would say would be close to non-recoverable. Or, if it is recoverable, it’s going to be a very painful process.”</p> <p>The committee is also aware that there are certain components with only one or two suppliers remaining in that area of design and production. This is especially true for the producers of the Standard Missile 3 interceptor’s Divert and Attitude Control System which guides the kill vehicle during the final phase of its intercept operations. The committee is deeply concerned about the absence of competition in the design and production of key missile defense technologies.</p> <p>The committee therefore directs the Director, Missile Defense Agency to provide a report to the House Committee on Armed Services within 180 days that details the key components in major MDA missile defense systems and the extent to which there is a risk of relying on only a single supplier for those components. The report should include any specific efforts MDA has undertaken in the past 2 years to ensure competition in the industry supplier base for those components and any efforts the MDA plans to inform a strategy to deal with the risks of reliance on a single supplier for critical missile defense technologies in the years ahead. In addition, the committee urges the Missile Defense Agency to provide as part of the fiscal year 2014 budget request a plan on how it intends to implement the strategy.</p>	<p>Report to Congress will be submitted in accordance with H.R. 4310 H. Rpt 112-479 FY13 House Armed Services Committee Report pp 100-101 within 180 days</p>
<p>H.R. 4310 H. Rpt 112-479 FY13 House Armed Services Committee Report pp.101-102</p>	<p>REPORT ON SPACE-BASED INTERCEPTORS</p> <p>The committee remains concerned that the full potential of ballistic missile technology is not being realized, particularly in space-based interceptor technology. The committee believes that the Secretary of Defense should pursue effective space-based interceptor technology to defend against long-range ballistic missile threats.</p> <p>Therefore, the committee directs the Secretary of Defense to provide a report to the defense</p>	<p>The Department will submit Report to Congress in accordance with H.R. 4310 H. Rpt 112-479 FY13 House Armed Services Committee Report pp101-102 within 120 days of enactment</p>

Missile Defense Agency Congressional Reporting Requirements

	<p>committees of Congress examining the technical and operational considerations associated with developing and operating a limited space-based interceptor capability. Within 120 days after the date of enactment of this Act, the report should include the following:</p> <ul style="list-style-type: none"> (A) the identification of the technical risks, gaps, and constraints associated with the development and operational of such a capability; (B) an assessment of the maturity levels of various technologies needed to develop and operate such a capability; (C) the key knowledge, research, and testing that would be needed for any nation to develop and operate an effective space-based interceptor capability; and (D) the estimated effectiveness and cost of potential options for developing and operating such a capability including their effectiveness in conjunction with existing and planned terrestrially-based missile defense systems. <p>Furthermore, the committee believes that the Director of the Missile Defense Agency should establish a space-based interceptor program office to begin technology and engineering development activities. This program office should serve as the single-point of contact vis-à-vis spaced-based interceptor technology. The committee directs the Director to seek funding for such an office in the fiscal year 2014 budget request for the Missile Defense Agency.</p>	
<p>Sec 231 of the FY12 National Defense Authorization Act (S 1867, TITLE II – Subtitle C pp.53-54</p>	<p>SEC. 231. ACQUISITION ACCOUNTABILITY REPORTS ON THE BALLISTIC MISSILE DEFENSE SYSTEM.</p> <p>(a) BASELINE REQUIRED.—</p> <p>(1) IN GENERAL.—Chapter 9 of title 10, United States Code, is amended by inserting after section 224 the following new section:</p> <p>“§ 225. Acquisition accountability reports on the ballistic missile defense system</p> <p>“(a) BASELINES REQUIRED.—(1) In accordance with paragraph (2), the Director of the Missile Defense Agency shall establish and maintain an acquisition baseline for—</p> <p> “(A) each program element of the ballistic missile defense system, as specified in section 223 of this title; and</p> <p> “(B) each designated major subprogram of such program elements.</p> <p>“(2) The Director shall establish an acquisition baseline required by paragraph (1) before the date on which the program element or major subprogram enters—</p> <p> “(A) engineering and manufacturing development; and</p> <p> “(B) production and deployment.</p> <p>“(3) Except as provided by subsection (d), the Director may not adjust or revise an acquisition baseline established under this section.</p> <p>“(b) ELEMENTS OF BASELINES.—Each acquisition baseline required by subsection (a) for</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

Missile Defense Agency Congressional Reporting Requirements

a program element or major subprogram shall include the following:

- “(1) A comprehensive schedule, including—
 - “(A) research and development milestones;
 - “(B) acquisition milestones, including design reviews and key decision points;
 - “(C) key test events, including ground and flight tests and ballistic missile defense system tests;
 - “(D) delivery and fielding schedules;
 - “(E) quantities of assets planned for acquisition and delivery in total and by fiscal year; and
 - “(F) Planned contract award dates.
 - “(2) A detailed technical description of—
 - “(A) the capability to be developed, including hardware and software;
 - “(B) system requirements, including performance requirements;
 - “(C) how the proposed capability satisfies a capability identified by the commanders of the combatant commands on a prioritized capabilities list;
 - “(D) key knowledge points that must be achieved to permit continuation of the program and to inform production and deployment decisions; and
 - “(E) how the Director plans to improve the capability over time.
 - “(3) A cost estimate, including—
 - “(A) a life-cycle cost estimate that separately identifies the costs regarding research and development, procurement, military construction, operations and sustainment, and disposal;
 - “(B) program acquisition unit costs for the program element;
 - “(C) average procurement unit costs and program acquisition costs for the program element; and
 - “(D) an identification of when the document regarding the program joint cost analysis requirements description is scheduled to be approved.
 - “(4) A test baseline summarizing the comprehensive test program for the program element or major subprogram outlined in the integrated master test plan.
- “(c) ANNUAL REPORTS ON ACQUISITION BASELINES.—
- “(1) Not later than February 15 of each year, the Director shall submit to the congressional defense committees a report on the acquisition baselines required by subsection (a).
 - “(2)(A) The first report under paragraph (1) shall set forth each acquisition baseline required by subsection (a) for a program element or major subprogram.
 - “(3) Each subsequent report under paragraph (1) shall include—
 - “(i) any new acquisition baselines required by subsection (a) for a program element or

Missile Defense Agency Congressional Reporting Requirements

	<p>major subprogram; and</p> <p>“(ii) with respect to an acquisition baseline that was previously included in a report under paragraph (1), an identification of any changes or variances made to the elements described in subsection (b) for such acquisition baseline, as compared to—</p> <p> “(I) the initial acquisition baseline for such program element or major subprogram; and</p> <p> “(II) the acquisition baseline for such program element or major subprogram that was submitted in the report during the previous year.</p> <p>“(3) Each report under this subsection shall be submitted in unclassified form, but may include a classified annex.</p> <p>“(d) EXCEPTION TO LIMITATION ON REVISION.—The Director may adjust or revise an acquisition baseline established under this section if the Director submits to the congressional defense committees notification of—</p> <p> “(1) a justification for such adjustment or revision;</p> <p> “(2) the specific adjustments or revisions made to the acquisition baseline, including to the elements described in subsection (b); and</p> <p> “(3) the effective date of the adjusted or revised acquisition baseline.”.</p> <p>(2) CLERICAL AMENDMENT.—The table of sections at the beginning of such chapter is amended by adding at the end the following new item:</p> <p> “225. Acquisition accountability reports on the ballistic missile defense system.”.</p> <p>(b) CONFORMING AMENDMENTS.—</p> <p>(1) FISCAL YEAR 2011 NDAA.—Section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111–383; 124 Stat. 4170; 10 U.S.C. 223 note) is repealed.</p> <p>(2) FISCAL YEAR 2008 NDAA.—Section 223 of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110–181; 122 Stat. 39; 10 U.S.C. 223 note) is amended by striking subsection (g).</p> <p>(3) FISCAL YEAR 2003 NDAA.—Section 221 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107–314; 116 Stat. 2484; 10 U.S.C. 2431 note) is repealed.</p>	
<p>FY12 Department of Defense Appropriations Act, Report Language – Senate Report 112-77, Missile Defense Agency (MDA) p. 236</p>	<p><i>Budget Justification Materials</i> - The fiscal year 2012 budget request includes \$8,558,556,000 for the Missile Defense Agency’s programs under the jurisdiction of the Defense Appropriations Subcommittee. The Committee has stated in the past its concerns with the poor quality and lack of detail of the corresponding budget justification materials and is pleased to note a signification improvement in the budget justification materials compared to prior years. However, the Committee believes that further improvement is warranted and looks forward to working with the Missile Defense Agency to continue improving its budget justification materials. In particular, the</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

Missile Defense Agency Congressional Reporting Requirements

	<p>Committee is disturbed by the lack of programmatic detail contained in the budget justification materials, particularly as it relates to prior year accomplishments and scheduled events in the budget year. In addition, the Committee has noticed discrepancies between the budget request as detailed in the budget justification materials and funding requests identified in the corresponding Ballistic Missile Defense System Accountability Report (BAR); as well as a lack of coordination between budget assembly and the Integrated Master Test Plan (IMTP). While the Committee understands that evolving requirements can affect a budget request, the Committee believes that MDA and its suppliers would benefit from more coordinated strategic planning. For instance, updating the IMTP out of cycle from the budget submission creates a disconnect between resources requested and those required to conduct scheduled test events. Therefore, the Committee directs the MDA to synchronize its budget submission, BAR and IMTP beginning with the fiscal year 2013 budget submission.</p>	
<p>FY12 National Defense Authorization Act, Report Language – Senate Report 112-26 Subtitle C – Missile Defense Matters pp. 38-39,</p>	<p>(Sec. 231) The committee recommends a provision that would amend section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111–383) to require the Comptroller General to review, for fiscal years 2012 through 2015, the annual reports of the Missile Defense Agency (MDA) on acquisition baselines and variances and assess the extent to which MDA has achieved its acquisition goals and objectives. The provision would also require the Comptroller General to report to the congressional defense committees on such assessment, and provide any findings and recommendations on missile defense acquisition programs that the Comptroller General considers appropriate. The provision would also provide a 3-year sunset for reports required on activities of the Missile Defense Executive Board. The committee notes that the Government Accountability Office (GAO) has played an instrumental role over many years in the oversight of missile defense acquisition programs, and in helping improve the oversight and accountability of such programs. Section 225 established the requirement for MDA acquisition baselines and annual reports on those baselines and variances. The existing legislative mandate for GAO’s review of missile defense acquisition programs originated in fiscal year 2002, and is now out of date with the new MDA acquisition baseline process. The committee believes it is important for GAO to review and report on the new process.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>FY12 National Defense Authorization Act, Report Language Title II – RDT&E Subtitle C – Missile Defense Programs – House Report 112-78, pp. 93-94</p>	<p>Section 231—Acquisition Accountability Reports on the Ballistic Missile Defense System This section would amend chapter 9 of title 10, United States Code, by adding a new section 225 that would require the Secretary of Defense to establish and maintain an acquisition baseline for each program element and designated subprogram element of the ballistic missile defense system before the program or subprogram enters engineering and manufacturing development, and production and deployment.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

Missile Defense Agency Congressional Reporting Requirements

	<p>This section would incorporate and expand upon annual reporting requirements established in section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011 (Public Law 111-383), to include reporting on schedules and milestones, acquisition quantities, requirements, technical capabilities, cost estimates, and test plans. Additionally, this section would repeal section 225 of the Ike Skelton National Defense Authorization Act for Fiscal Year 2011, section 223(g) of the National Defense Authorization Act for Fiscal Year 2008 (Public Law 110-181), and section 221 of the Bob Stump National Defense Authorization Act for Fiscal Year 2003 (Public Law 107-314), to reduce duplication in missile defense reporting requirements.</p>	
<p>FY12 National Defense Authorization Act, Report Language – House Report 112-239,, Subtitle C Missile Defense Matters pp. 43-44</p>	<p>SEC. 232. COMPTROLLER GENERAL REVIEW AND ASSESSMENT OF MISSILE DEFENSE ACQUISITION PROGRAMS. (a) Comptroller General Assessment-</p> <p>(1) IN GENERAL- The Comptroller General of the United States shall review the annual reports submitted under section 225(c) of title 10, United States Code, as added by section 231 of this Act, that cover any of fiscal years 2012 through 2015 and assess the extent to which the Missile Defense Agency has achieved its acquisition goals and objectives.</p> <p>(2) REPORTS- Not later than March 15, 2013, and each year thereafter through 2016, the Comptroller General shall submit to the congressional defense committees a report on the assessment under paragraph (1) with respect to the acquisition baselines for the preceding fiscal year. Each report shall include any findings and recommendations on missile defense acquisition programs and accountability therefore that the Comptroller General considers appropriate.</p> <p>(b) Annual Reports on Missile Defense Executive Board Activities- In each of the first three reports submitted under section 225(c) of title 10, United States Code, as added by section 231 of this Act, the Director shall include a description of the activities of the Missile Defense Executive Board during the fiscal year preceding the date of the report, including the following:</p> <p>(1) A list of each meeting of the Board during such year. (2) The agenda and issues considered at each such meeting. (3) A description of any decisions or recommendations made by the Board at each such meeting.</p> <p>(c) Repeal of Superseded Reporting Authority- Section 232 of the National Defense Authorization Act for Fiscal Year 2002 (Public Law 107-107; 115 Stat. 1037; 10 U.S.C. 2431 note) is amended by striking subsection (g).</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>Sec. 225 of the FY11 National Defense</p>	<p>SEC. 225. ACQUISITION ACCOUNTABILITY REPORTS ON THE BALLISTIC MISSILE DEFENSE SYSTEM.</p>	<p>MDA to provide BMDS Accountability Report (BAR)</p>

Missile Defense Agency Congressional Reporting Requirements

<p>Authorization Act (H.R. 6523), p. 34.</p>	<p>(a) BASELINES REQUIRED.—The Secretary of Defense shall ensure that the Missile Defense Agency establishes and maintains an acquisition baseline for each program element of the ballistic missile defense system, as specified in section 223 of title 10, United States Code.</p> <p>(b) ELEMENTS OF BASELINES.—Each acquisition baseline required by subsection (a) for a program element shall include the following:</p> <p>(1) A comprehensive schedule for the program element, including—</p> <p>(A) research and development milestones;</p> <p>(B) acquisition milestones, including design reviews and key decision points;</p> <p>(C) key test events, including ground and flight tests and ballistic missile defense system tests; and</p> <p>(D) delivery and fielding schedules.</p> <p>(2) A detailed technical description of—</p> <p>(A) the capability to be developed, including hardware and software;</p> <p>(B) system requirements;</p> <p>(C) how the proposed capability satisfies a capability identified by the commanders of the combatant commands on a prioritized capabilities list;</p> <p>(D) key knowledge points that must be achieved to permit continuation of the program and to inform production and deployment decisions; and</p> <p>(E) how the Missile Defense Agency plans to improve the capability over time.</p> <p>(3) A cost estimate for the program element, including—</p> <p>(A) a life cycle cost estimate;</p> <p>H. R. 6523—35</p> <p>(B) program acquisition unit costs for the program element;</p> <p>(C) average procurement unit costs and program acquisition costs for the program element; and</p> <p>(D) an identification when the program joint cost analysis requirements description document is scheduled to be approved.</p> <p>(4) A test baseline summarizing the comprehensive test program for the program element outlined in the integrated master test plan.</p> <p>(c) ANNUAL REPORTS ON ACQUISITION BASELINES.—</p> <p>(1) ANNUAL REPORTS REQUIRED.—Not later than February 15, 2011, and annually thereafter, the Director of the Missile Defense Agency shall submit to the congressional defense committees a</p>	<p>to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
--	--	--

Missile Defense Agency Congressional Reporting Requirements

	<p>report on the acquisition baselines required by subsection (a). The first such report shall set forth the acquisition baselines, and each later report shall identify the significant changes or variances, if any, in any such baseline from any earlier report under this subsection.</p> <p>(2) FORM.—Each report under this subsection shall be submitted in unclassified form, but may include a classified annex.</p> <p>(d) ANNUAL REPORTS ON MISSILE DEFENSE EXECUTIVE BOARD ACTIVITIES.—The Director shall include in each report under subsection</p> <p>(c) a description of the activities of the Missile Defense Executive Board during the preceding fiscal year, including the following:</p> <p>(1) A list of each meeting of the Board during the preceding fiscal year.</p> <p>(2) The agenda and issues considered at each such meeting.</p> <p>(3) A description of any decisions or recommendations made by the Board at each such meeting.</p>	
<p>H. Rpt. 110-279, the House Appropriations Committee Report to accompany the FY 2008 Department of Defense Appropriations Act (H.R. 3222), p. 382</p>	<p>The Committee directs MDA to develop a system-wide plan to report according to the spirit of existing acquisition laws to improve accountability and transparency of its program. MDA is directed to report all elements that are effectively in System Development and Demonstration or production corresponding baselines, the results of independent cost estimates performed by the Cost Analysis Improvement Group, unit costs, and unit cost growth. This direction should not be construed as requiring full compliance with DoD Regulation 5000.2. In addition, while developing and fielding the BMDS outside DoD's normal acquisition cycle, MDA should address operational testing by including operational test objectives in developmental tests. The Committee directs that this plan be delivered to the congressional defense committees with the submission of the fiscal year 2009 budget and updated semiannually.</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p><i>Sec 223(a). Ballistic Missile Defense Programs: Procurement; National Defense Authorization Act for Fiscal Year 2004 (H.R. 1588, H. Rpt. 108-354, pp. 30-31)</i></p>	<p><i>BUDGET JUSTIFICATION MATERIALS—In the budget justification materials submitted to Congress in support of the Department of Defense budget for any fiscal year (as submitted with the budget of the President under section 1105(a) of title 31), the Secretary of Defense shall specify, for each ballistic missile defense system element for which the Missile Defense Agency is engaged in planning for production and initial fielding, the following information: (1) The production rate capabilities of the production facilities planned to be used for production of that element. (2) The potential date of availability of that element for initial fielding. (3) The estimated date on which the administration of the acquisition of that element is to be transferred from the Director of the Missile Defense Agency to the Secretary of a military department.</i></p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR partially satisfies the requirement through its schedule baseline.</p> <p>Exhibit P-21 – Budget Production Schedule Procurement -MDA</p>

Missile Defense Agency Congressional Reporting Requirements

		<p>0208866C, Terminal Defense,</p> <p>0208866C, Aegis BMD,</p> <p>0208866C, BMD Sensors</p>
<p><i>Sec 223(b). Ballistic Missile Defense Programs: Procurement; National Defense Authorization Act for Fiscal Year 2004 (H.R. 1588, H. Rpt. 108-354, pp. 30-31)</i></p>	<p><i>FUTURE-YEARS DEFENSE PROGRAM-The Secretary of Defense shall include in the future-years defense program submitted to Congress each year under section 221 of this title an estimate of the amount necessary for procurement for each ballistic missile defense system element, together with a discussion of the underlying factors and reasoning justifying the estimate.</i></p>	<p>Procurement -MDA</p> <p>0208866C, Terminal Defense,</p> <p>0208866C, Aegis BMD,</p> <p>0208866C, BMD Sensors</p>

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

PART SUMMARY

Missile Defense

Mission:

To Develop and deploy a layered BMDS to defend the United States, its deployed forces, allies and friends from ballistic missile attacks of all ranges in all phases of flight.

In accordance with the President's Management Agenda, Budget and Performance Integration Initiative, this program has been assessed using the Program Assessment Rating Tool (PART). Remarks regarding program performance and plans for performance improvement can be located at the Expectmore.gov website.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

**Missile Defense Agency
Fiscal Year (FY) 2014 President's Budget**

ACRONYMS AND ABBREVIATIONS

A	
A&AS	Advisory and Assistance Services
AAMDC	Army Air Missile Defense Command
ABIR	Airborne Infrared Radar
ABL	Airborne Laser
ABS	American Bureau of Shipping
ACD	Adversary Capability Document
ACD&P	Component Development and Prototypes
ACL	Achievable Capabilities List
ADP	Arrow Deployability Program; Automated Data Processing; Adversary Delta Package
AEP	Analysis Execution Plans
AFB	Air Force Base
AFS	Avionics Flight Software
ALTBMD	Active Layered Theater Ballistic Missile Defense
AMPP	Arrow Missile Production Program
ANMC	Anniston Munitions Center
AN/TPY	Army Navy/Transportable Radar Surveillance
AOC	Air Operations Center
AOR	Area of Responsibility
APL	Applied Physics Laboratory
ARAV	Aegis Readiness Assessment Vehicles
ARO	All Reflective Optics
ARST	Advanced Remote Sensor Technology
ASIP	Arrow System Improvement Program; Application Specific Integrated Circuit
ASP	Advanced Signal Processor
AST	Airborne Surveillance Test Bed; Arrow System Test
ATD	Advanced Technology Development
AT&L	Acquisition, Technology and Logistics
AWS	Arrow Weapon System; AEGIS Weapon System
B	
BCA	Business Case Analysis; BMDS Capability Assessment
BC/FC	Beam Control/Fire Control
BCSC-T	BMDS Communication System Complex Transportable
BM	Battle Management; Ballistic Missile
BMD	Ballistic Missile Defense
BMDS	Ballistic Missile Defense System
BNOSC	BMDS Network Operations and Security Center
BOA	BMDS Overhead Non-imaging Infrared (ONIR) Architecture
BQT	Block Qualification Testing
BRAC	Base Realignment and Closure
BSC	Battery Support Center
BSO	BMDS Safety Officers
BSP	BMD Signal Processor
BVT	Booster Verification Test
BWO	BMDS Watch Officers

ACRONYMS AND ABBREVIATIONS

C	
C2BMC	Command and Control, Battle Management, and Communications
CCC	C2BMC Control Center
CCAR	Comprehensive Cost and Requirement System
CCM	Counter Counter-Measures
CCMWG	Common Cost Methodology Working Group
CD	Concept Descriptions; Cobra Dane
CDR	Critical Design Review
CDU	Cobra Dane Upgrade
CE	Capability Enhanced
CEC	Critical Engagement Conditions
CEM	Carrier Electronics Module
C/FFP	Cost Fixed Firm Price
CICA	Competition and Contracting Act
CLE	Command and Launch Equipment
CLS	Contractor Logistics Support
CMART	Consolidated Missile Asset Reused for Targets
CMOC	Cheyenne Mountain Operations Center
CMP	Common Message Processor
CNIP	C2BMC Network Interface Processor
COCOM	Combatant Commander
COCOM C2	Combatant Command-Command and Control
COIL	Chemical Oxygen-Iodine Laser
COMSEC	Communication Security
CONOPS	Concept of Operations
CONUS	Continental United States
COOP	Calibrated Orbiting Objects Program (COOP)
COTS	Commercial Off-The-Shelf
CPAF	Cost Plus Award Fee
CPIF	Cost-Plus-Incentive-Fee
CPFF	Cost Plus Fixed Fee
CR	Capability Release
CSS	Contractor Support Services
CTEIP	Central Test and Evaluation Investment Program
CTTO	Concurrent Test, Training and Operations
CTV	Control Test Vehicle
CY	Calendar Year
D	
DAA	Defense Appropriations Act
DACS	Divert and Attitude Control System
DCMA	Defense Contract Management Agency
DFAS	Defense Finance and Accounting Service
DIACAP	DoD Information Assurance Certification and Accreditation Process
DISA	Defense Information Systems Agency
DISN	Defense Information Systems Network
DMETS	Distributed, Multi-Echelon Training System
DoD	Department of Defense
DOT&E	Director, Operational Test and Evaluation
DREN	Defense Research Engineering Network
DSA	Digital Simulations Architecture

ACRONYMS AND ABBREVIATIONS

DSWS	David's Sling Weapon System
DT/OT	Development Test/Operational Test
DVT	Development Verification Test
DW	Defense Wide
E	
E-LRALT	Enhanced Long Range Air Launch Target
EA	Executing Agent
EADSIM	Extended Air Defense Simulation
ECI	European Communications Interface
ECS	Element Capability Specification
EDM	Engineering Development Model
EDP	Evolutionary Development Program
EHF	Extremely High Frequency
EI	Early Intercept
EIS	European Interceptor Site
EKV	Exoatmospheric Kill Vehicle
EMDR	Executive Mission Data Review
EME	Empirical Measurement Events
EMR	European Midcourse Radar
EO/IR	Electro-Optical/Infrared
EoR	Engage on Remote
EQLB	Executive Quick Look Briefing
ESI	External System Interface; Enterprise Software Initiative
ESL	External Sensors Lab
ET	Embedded Test
EUCOM	European Command
EW SPT	Early Warning Special Product Team
EWR	Early Warning Radar
EWS	Enterprise Work Stations
F	
FDE	Force Developers Evaluation
FFP	Firm Fixed Price
FFRDC	Federally Funded Research and Development Center
FPA	Focal Plane Array
FMA	Foreign Material Acquisition; Foreign Military Asset
FMS	Foreign Military Sales
FT	Flight Test
FTF	Flexibility Target Family
FTG	Flight Test GMD
FTM	Flight Test Mission
FY	Fiscal Year
FYDP	Future Years Defense Program
G	
GBI	Ground Based Interceptor
GBR-P	Ground Based Radar Prototype
GCN	Global Command Network; GMD Communications Network
GEM	Global Engagement Manager; Guidance Enhancement Missiles (PATRIOT)
GFC / C	GMD Fire Control and Communications
GFI	Government Furnish Information

ACRONYMS AND ABBREVIATIONS

GGT	Government Ground Test
GIG	Global Information Grid
GM	Ground-based Midcourse
GMD	Ground-based Midcourse Defense
GN&C	Guidance Navigation and Control
GS	Ground Systems
GTD	Ground Test Distributed
GTI	Ground Test Integrated
GTX	Ground Test (Element to Element)
H	
HACNE	High Availability Comm Node Equipment
HAENS	High Altitude Exoatmospheric Nuclear Survivability
HALO	High Altitude Observatory
HBCN	High Mobility Multipurpose Wheeled Vehicle (HMMWV) Based Communication Node
HEL	High Energy Laser
HEMP	High Altitude Electromagnetic Pulse
HIL	Human-in-the-Loop; Hardware-in-the-Loop
HWIL	Hardware-in-the-Loop
HMMWV	High Mobility Multipurpose Wheeled Vehicle
I	
IA	Information Assurance
IAI	Israel Aircraft Industries
IAM	Information Assurance Manager
IAMD	Integrated Air and Missile Defense
ICBM	Intercontinental Ballistic Missile
ICD	Interface Control Document
ICOFT	Institutional Conduct of Fire Trainer
ICSS	Interim Contractor Support System
IDF	Israel's Defense Forces
IDT	In-Flight Interceptor Communications System Data Terminal
IETM	Integrated Electronic Technical Manual
IFICS	In-Flight Interceptor Communications System
ILS	Integrated Logistics Support
IM	Insensitive Munitions
IM/FHC	Insensitive Munitions / Final Hazard Classification
IMoD	Israeli Ministry of Defense
IMP	Integrated Master Plan
IMTP	Integrated Master Test Plan
IPT	Integrated Product Team
IR	Infrared
IRBM	Intermediate Range Ballistic Missile
IRST	Infrared Search and Track
IRT	Independent Review Team
ISA&I	Israeli System Architecture and Integration
ISC	Intelligence Support Cell (MDA)
ISSE	Information System Security Engineering
ISSRB	Ignition System Safety Review Board
ISTS	Integrated Simulation and Tactical Software
IT	Integrated Test; Information Technology
ITB	Israeli Test Bed

ACRONYMS AND ABBREVIATIONS

ITP	Interceptor Technology Program
J	
JAT	Joint Analysis Teams
JDA	Japan Defense Agency
JEWL	Joint Early Warning Laboratory
JFCC-IMD	Joint Functional Component Command - Integrated Missile Defense
JHU	John Hopkins University
JNIC	Joint National Integration Center, Schriever AFB, CO
JRD	Joint National Integration Center Research and Development
JTF-GNO	Joint Task Force-Global Network Operations
JITC	Joint Interoperability Test Certification
JTIDS	Joint Tactical Information Data System
JTOC	JNIC Target Operations Center
K	
KE	Kinetic Energy
KMR	Kwajalein Missile Range
KMRSS	Kwajalein Mobile Range Safety System
KTF	Kauai Test Facility
KM	Kilometers
KV	Kill Vehicle
L	
LAN	Local Area Network
LCT	Laser Communications Terminal
LDC	Limited Defensive Capability
LGG	Light Gas Gun
LORA	Level of Repair Analysis
LOT	Launch on TADIL
LFT&E	Live Fire Test and Evaluation
LMI	Logistics Management Information
LMSSC	Lockheed Martin Space Systems Company
LRALT	Long Range Air Launched Target
LRBM	Long Range Ballistic Missile
LRS&T	Long Range Surveillance and Tracking
LSE	Launch Support Equipment
LTP	Laser Technology Program
LTPO	Lower Tier Program Office
LUT	Limited User Testing
M	
M&S	Modeling and Simulation; Materials and Structure
MAP	MDA Assurance Plan
MARC	MDA Assurance Representative
MARTI	Missile Alternative Range Target Instrument
MASINT	Measures and Signals Intelligence
MCS	Management Control System
MD	Missile Defense
MDA	Missile Defense Agency
MDEB	Missile Defense Executive Board
MDIOC	Missile Defense Integrated Operations Center

ACRONYMS AND ABBREVIATIONS

MDR	Mission Data Review
MDSE	Missile Defense System Exerciser
MDSEC	Missile Defense Space Experimentation Center
MEB	Missile Equipment Building; Mechanical Electrical Building
MER	Manpower Estimate Report
MET	Modernization Enterprise Terminal
MiDAESS	Missile Defense Agency Engineering and Support Services
MILCON	Military Construction
MIL-STD	Military Standards
MIP	Master Integration Plan
MIPS	Missile Defense Planning System
MIPR	Military Interdepartmental Purchase Request
MIS	MDSEC Interchange System
MIT	Miniature Interceptor Technology; Massachusetts Institute of Technology
MIT/LL	Massachusetts Institute of Technology, Lincoln Laboratory, Lexington, MA
MLP	Mobile Launch Platform
MMIC	Multi-Mission Integration Cell; Microwave Monolithic Integrated Circuits
MOA	Memorandum of Agreement
MOC	Missile Defense Agency Operations Center
MOST	Multiple Target Tracking Optical Sensor Array Technology
MOU	Memorandum of Understanding
MPAT	Producibility and Manufacturing Technology
MRBM	Medium Range Ballistic Missile
MRL	Multiple Rocket Launcher; Mission Requirements Letter
MRP	Missile Round Pallet
MRRB	Materiel Release Review Board
MRSS	Mobile Range Safety System
MRT	Medium Range Target
MTEPP	Master Test and Evaluation Program Plan
MTT	Missile Transport Trailer
N	
NATO	North Atlantic Treaty Organization
NAVSEA	Naval Sea Systems Command
NCA	National Command Authority
NCES	Net-Centric Enterprise Services
NCR	National Capital Region
NFIRE	Near Field Infrared Experiment
NGST	Northrop Grumman Space Technology
NORAD	North American Aerospace Defense Command
NORTHCOM	Northern Command
NIPRNET	Non-Secure Internet Protocol Router Network
NMCC	National Military Command Center
NRL	Naval Research Laboratory, Washington, DC
NTD	Near-Term Discrimination
O	
O&M	Operations and Maintenance
OCONUS	Outside of CONUS
ODA	Optical Data Analysis
ODI	Offensive/defensive Integration

ACRONYMS AND ABBREVIATIONS

OGA	Other Government Agency
OIS	Orbital Insertion Stage
ONIR	Overhead Non-Imaging Infra-Red
OPIR	Overhead Persistent Infrared
OPLAN	Operations Plan
OPSCAP	Operations Capabilities
OSC	Operations Support Center
OSS	Off-Shore Support
OTA	Operational Test Agency
OTHR	Over The Horizon Radar
OVA	Operational Viability Assessment
P	
PA	Project Arrangement
PAA	Phased Adaptive Approach
PAM	Planning Allocation Matrix
PACOM	U.S. Pacific Command
PAC-3	Patriot Advanced Capability-3
PB	President's Budget
PBL	Performance Based Logistics
PDR	Preliminary Design Review
PDS	Post Deployment Software
PDSS	Post Deployment Software Support
PE	Program Element
PFR	Post Flight Reconstruction
PIDS	Prime Item Development Specification
PMAP	Process Mission Assurance Plan
PMRF	Pacific Missile Range Facility, Barking Sands, Kauai, HI
PMT	Pre-Mission Test
PPU	Prime Power Unit
PROCAP	Protection Capability
PRST	Pacific Range Support Team
PSN	Parallel Staging Area
PTE	Plant Estimates
PTSS	Precision Tracking Space System
PTV	Propulsion Test Vehicle
PY	Prior Year
Q	
QLB	Quick Look Briefing
QSMA	Quality Safety and Mission Assurance
R	
RAM	Reliability, Availability and Maintainability
RCS	Radar Cross Section
RDEC	Research, Development, and Engineering Center
RDSIS	Radar Digital Signal Injection System
RDT&E	Research, Development, Test, and Evaluation
RF	Radio Frequency
RFA	Requests for Analysis
RFI	Requests for Information
RFP	Request for Proposal

ACRONYMS AND ABBREVIATIONS

RFSG	Radio Frequency Scene Generator
RRF	Risk Reduction Flight
RST	Radar System Technology
RTO	Responsible Test Organization
RTOS	Real Time Operating System
RTS	Ronald Reagan Test Site, Kwajalein, Marshall Islands
RSA	Redstone Arsenal
RV	Reentry Vehicle
S	
SATCOM	Satellite Communications
SBIR	Small Business Innovative Research
SBIRS	Space Based Infrared System
SBX	Sea Based Test X-Band Radar
SCD	SM-3 Cooperative Development
SCR	System Capability Review
SDACS	Solid Divert Attitude Control System
SDR	System Design Review; Software Design Review
SEAR	System Engineering Assessment Report
SEBO	Systems Engineering Behavioral Objectives
SETA	Scientific Engineering and Technical Assistance
SIPRNET	Secret Internet Protocol Router Network
SIM	Simulation
SM	Standard Missile
SM-3	Standard Missile 3
SMDC	Space and Missile Defense Command, U.S. Army
SME	Subject Matter Expert
SNL	Sandia National Lab
SOLD	Simulation-Over-Live Driver
SPFR	System Post Flight Reconstruction
SRALT	Short Range Air Launch Target
SRBM	Short Range Ballistic Missile
SRBMD	Short Range Ballistic Missile Defense
SRR	System Requirements Review; Software Readiness Review
SS	Sole Source, Summary Screens
SSF	Single Stimulation Framework
STARS	Strategic Target System
STRATCOM	US Strategic Command
STS	Stockpile to Target Sequence
STSS	Satellite Tracking and Surveillance System
STTR	Small Business Technology Transfer
T	
TADIL-J	Tactical Digital Information Link Joint
TC	Targets and Countermeasures
TDACS	Throttleable Divert and Attitude Controls System
TDP	Truth Data Package; Threat Data Packages
TDRD	Truth Data Requirements Document
TDS	Terminal Defense Segment
TEC	Test Execution Control
TEDAC	Test & Evaluation Data Analysis Capability
TEMP	Test and Evaluation Master Plan

ACRONYMS AND ABBREVIATIONS

TES	Theater Event System
TFCC	THAAD Fire Control and Communications
THAAD	Terminal High Altitude Area Defense
TMW	Theater Missile Warning
TOG	Technical Objectives and Goals
TOO	Test of Opportunity; Target of Opportunity
TTP	Tactics, Techniques & Procedures
TSG	Tactical Support Groups
TTS	Transportable Telemetry Systems
T&E	Test and Evaluation
U	
UARC	University Affiliated Research Centers
UDS	Universal Documentation Status
UEWR	Upgraded Early Warning Radar
UHF	Ultra High Frequency
UID	Unique Identification
UK	United Kingdom
USFJ	United States Forces Japan
USFK	United States Forces Korea
USMTF	United States Message Text Format
USNORTHCOM	United States Northern Command
USPACOM	United States Pacific Command
USSTRATCOM	United States Strategic Command
V	
V&V	Verification and Validation
VAFB	Vandenberg Air Force Base, CA
VLS	Vertical Launching System
VV&A	Verification, Validation and Accreditation
W	
WASP	Wide-body Airborne Sensor Platform
WMD	Weapons of Mass Destruction
WSC	Wargames Support Center
WSEIT	Weapon Sys Engr & Integ Team
WSMR	White Sands Missile Range, White Sands, NM
X	
XBR	X-Band Radar
X-Lab	Experimental Laboratory
XML	Extensible Markup Language
XTR	X-band Transportable Radar

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</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	-	67.921	79.975	309.203	-	309.203	212.715	220.185	220.732	220.373	Continuing	Continuing
MD25: <i>Advanced Technology</i>	-	67.484	76.005	229.882	-	229.882	134.166	140.968	140.276	138.372	Continuing	Continuing
MD85: <i>Common Kill Vehicle</i>	-	0.000	0.000	70.000	-	70.000	70.300	70.200	70.100	69.900	0.000	350.500
MD40: <i>Program Wide Support</i>	-	0.437	3.970	9.321	-	9.321	8.249	9.017	10.356	12.101	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

Beginning in FY 2014, Ballistic Missile Defense Technology will realign to the following six focus areas: Advanced Concepts and Performance Assessments, Discrimination Sensor Technology, Weapons Technology, Advanced C4ISR (Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance), Advanced Research, and Common Kill Vehicle.

In FY 2014, funding from the Advanced Remote Sensor Technology Program Element (0604886C) and the Directed Energy Research Program Element (0603901C) transfer into the Ballistic Missile Defense (BMD) Technology Program Element (0603175C). Additionally a portion of the funding for Enhanced Command, Control, Battle Management, and Communication moves to the Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element (0603896C). Lastly, the Missile Defense Agency is developing Common Kill Vehicle Technology to address emerging threats and increase the protection of the homeland. This is a continuation of the plan started in FY 2013 per Public Law 112-239, the National Defense Authorization Act for Fiscal Year 2013. This act directed the development of a long-term plan for the Exo-Atmospheric Kill Vehicle (EKV) that addresses both modifications and enhancements to the current EKV and options for the competitive development of a next generation EKV for the Ground Based Interceptor (GBI) and any other interceptor that might be developed for the defense of the United States against long-range ballistic missiles. Starting in FY 2014, kill vehicle technology development work begins in the BMD Technology Program Element (0603175C).

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) Technology Program Element develops future Ballistic Missile Defense System (BMDS) capabilities to out-pace emerging and evolving threats. Advanced Technology is the program execution arm of MDA's Architecture and Engineering thrusts. Advanced Technology identifies, develops, and readies for transition in association with the Chief Architect and the Director of Engineering the technical solutions that meet BMDS shortfalls identified by the Combatant Commanders. Advanced technology maintains a robust modeling and simulation environment to ensure emerging technology cost-effectively increases performance when inserted into the BMDS architecture.

MDA uses the Prioritized Capabilities List (PCL) and the Agency's Achievable Capabilities List (ACL) to prioritize Advanced Technology investments within six focus areas: 1) Advanced Concepts and Performance Assessment, 2) Discrimination Sensor Technology, 3) Weapons Technology, 4) Advanced C4ISR, 5) Advanced

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	
<p>Research, and 6) Common Kill Vehicle. MDA's investments balance the pursuit of promising next generation technology with near-term solutions to enhance existing BMDS capability.</p> <p>1. The Advanced Concepts & Performance Assessment focus area centralizes efforts for the development of models, simulations, algorithms, and software. This area leverages industry standard model-based development techniques to give engineers the data to decompose system requirements allocated from MDA's System Engineer, perform trade studies, and complete performance assessments. Subject matter experts integrate physics-based models into simulations to evaluate performance of components and system-level assemblies. This focus area combines models of promising technical solutions into BMDS system-level simulations. This model-based approach reduces risks and costs associated with successful development, demonstration, and implementation of BMDS technology initiatives. Ultimately, BMD Technology's model-based program supplies the warfighter with confidence that future architectures will meet their needs.</p> <p>2. The Discrimination Sensor Technology focus area matures technologies with proven tactical applications and applies those technologies plus emerging technologies to the missile defense mission area. Discrimination Sensor Technology develops solutions to improve identifying, acquiring, tracking and discriminating incoming threats, specifically addressing shortfalls in the Prioritized Capabilities List. Areas of concentration include advanced detectors, infrared sensors, focal planes and algorithms for passive and active ground, sea, air and space systems. Sensor technology enhances the BMDS capability to discriminate increasing numbers of objects by an order of magnitude and precisely identify the threat.</p> <p>This technology has the potential to significantly enhance/enable the following capabilities while decreasing the cost of the BMDS:</p> <ul style="list-style-type: none">- Discriminating BMDS sensors with global persistence- Discriminating weapon sensors- End-to-end correlation of sensor track and discrimination data- Timely and accurate kill assessment- Enhanced probability of kill <p>3. Weapons Technology develops technology solutions to destroy an increasing number of threat objects. Areas of concentration include next-generation kinetic interceptor technology, and directed energy intercept. Weapons Technology focuses on reducing the cost of intercepting a threat object by developing smaller, faster, less-complex interceptors, developing light-weight/high power lasers and the novel beam propagation technology required for strategic-class directed energy weapons. Weapons technology works closely with Sensor Technology to correlate threat identification and engagement hand over requirements and capability. This area will also enable more agile, higher velocity interceptors that leverage our discrimination technology advances to defeat greater raid sizes and increasingly complex threats. This focus area is developing the enabling technology necessary to make game-changing breakthroughs with future interceptors.</p> <p>4. Advanced Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) develops and matures technology which enables rapid and exponential capability increases in our command, control, battle management and communications (C2BMC) and existing sensor networks. We will develop and mature technology, software and algorithms which facilitate integration of the Service's command and control networks into the BMDS. This focus area will invest in advanced C2BMC technology that has the potential to increase battlespace for all BMDS interceptors including the Terminal High Altitude Area Defense and Ground-based Interceptors.</p>		

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>
---	--

5. Advanced Research conducts leading edge research and development to create and enable future missile defense capability. MDA executes this mission by capitalizing on the creativity and innovation of the brightest minds in our Nation's universities and small businesses, collaborative research partnerships between allied country academic institutions, and innovative ideas from industry. Advanced Research identifies priorities and balances the research portfolio in collaboration with the Agency's Chief Architect, Chief Engineer, and an Agency-wide executive level Research Council.

6. Common Kill Vehicle develops technology that supports both the Ground Based Interceptor (GBI) and Standard Missile-3 (SM-3) variants, focusing in particular on the ability to address future threat technology advancements, where component technology and architecture can contribute both to homeland and regional defense. The component technology and architecture also has the potential to increase the capability of all missile defense interceptors. By progressing with the common kill vehicle, development of the next generation of deployable and upgradeable kill vehicles, can begin for both the GBI and Standard Missile-3 variants, as soon as the technology is tested.

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	74.920	79.975	81.388	-	81.388
Current President's Budget	67.921	79.975	309.203	-	309.203
Total Adjustments	-6.999	0.000	227.815	-	227.815
• 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	-6.999	0.000			
• Other Adjustment	0.000	0.000	227.815	-	227.815

Change Summary Explanation

The FY 2014 increase in this Program Element is the net result of the addition of both the Advanced Remote Sensor Technology Program Element (0604886C) and the Directed Energy Research Program Element (0603901C) as well as the transfer of a portion of the funding for Enhanced Command, Control, Battle Management and Communication, to the Ballistic Missile Defense Command and Control, Battle Management and Communications to Program Element 0603896C (Budget Project MD01). The increase also represents the move of funds for increased discrimination sensor technology development, and Advanced Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance. Additionally, the Missile Defense Agency is developing Common Kill Vehicle Technology (Budget Project MD85).

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 3: <i>Advanced Technology Development (ATD)</i>					R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>				PROJECT MD25: <i>Advanced Technology</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
MD25: <i>Advanced Technology</i>	-	67.484	76.005	229.882	-	229.882	134.166	140.968	140.276	138.372	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

N/A

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense (BMD) Technology portfolio develops technology to maximize effectiveness and minimize costs; explores and develops technology to counter future threats; leverages technology investments of other Department of Defense (DoD) organizations, industry, other government agencies and international partners.

The Advanced Concepts & Performance Assessment focus area delivers an integrated test bed simulation and analysis capability to define technology focus areas, validate contractor technology solutions and models, and evaluate future BMDS architecture solutions. This capability enables identification and assessment of innovative technology contributions to Ballistic Missile Defense System (BMDS) performance and facilitates the rapid exploration of potential solutions, presenting options and alternatives not otherwise achievable. The Advanced Concepts & Performance Assessment laboratory identifies algorithms, models, and mathematical relationships that, when combined in integrated simulations, characterize component/system key parameters and define performance expectations for all Advanced Technology programs. Products produced by the model-based engineering process directly inform BMDS architect and systems engineering activities enabling evaluation of a large range of candidate technology and development of well-defined system/component-level requirements.

Discrimination Sensor Technology enhances discrimination through the development and demonstration of a wide range of sensor technology and techniques. The goals for enhanced discrimination are to improve the probability of engagement success for stressing threats, expand the Ballistic Missile Defense (BMD) battle space, and increase the ability to negate larger raid sizes. System modeling indicates geographically and spectrally-diverse advanced sensors will improve global persistent tracking and the ability to discriminate by up to an order of magnitude. These improvements increase all weapon systems performance for regional and homeland defense. Discrimination Sensor Technology components are tested in the laboratory and then integrated into systems for test on the ground and in the air. Promising individual sensor technologies will be integrated into a discrimination sensor test bed and participate in stressing BMDS test environments to ensure only high benefit/cost effective technologies are developed. Discrimination Sensor Technology is applicable to all layers of the battle space, to include ground, maritime, high and very-high-altitude airborne and space basing.

The Weapons Technology focus area contains advanced technology initiatives that support the design of the next-generation high energy laser, next-generation interceptor technology, and next-generation kill vehicle technology. This effort includes the directed energy collaboration with the Office of the Assistant Secretary of Defense for Research and Engineering, the Defense Advanced Research Projects Agency and the High Energy Laser Joint Technology Office in a systems engineering based strategy for the research, development, test and evaluation of high energy laser technology. To transition to the next generation high power directed

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>
---	--	--

energy platform in a cost effective manner, MDA is pursuing two promising laser technologies in a competitive environment. These candidate laser systems offer a path to low cost, high efficiency, electrically-driven, compact, light-weight high energy lasers for multiple missile defense applications including discrimination and boost phase defense. MDA is pursuing the Diode Pumped Alkali Laser System and fiber combining laser technology based on their efficiency and scaling potential. A 200 kilowatt (kW) class flight qualifiable laser prototype will be built and tested based on the selected technology for Ballistic Missile Defense System (BMDS) enhancement. A surrogate high altitude, low mach, long endurance platform will be instrumented to measure platform vibration and characterize high altitude atmospheric environment for laser propagation to inform the design and flight compatible packaging of the high powered laser payloads. The results will be used to validate key model assumptions concerning the environment for laser propagation to be used for airborne high powered directed energy concept definition, conceptual design and system development. The Weapons Technology focus area will also develop technology that enables more agile, higher velocity interceptors that leverage our discrimination technology advances to defeat greater raid sizes and increasingly complex threats. We will focus on developing the enabling technology necessary to make game-changing breakthroughs with our future interceptors.

Advanced Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) enables rapid and exponential capability increases in our command, control, battle management and communications (C2BMC) and existing sensor networks. We will develop and mature technology, software and algorithms which facilitate integration of the Services command and sensor network approaches into the BMDS.

The Advanced Research focus area develops new BMDS capability by leveraging industry and university research. This focus area also manages the selection process and administers the Missile Defense Small Business Innovation Research (SBIR) Program Element, 0605502C. In FY 2014, the Advanced Research focus area will conduct Advanced Technology Innovation Broad Agency Announcement (ATI BAA) solicitation for identifying potentially breakthrough research on missile defense related technology with private industry, qualified accredited educational institutions, and non profit organizations.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Enhanced Command, Control, Battle Management and Communication</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Established a 24/7 data link and exercised a scripted reverse-cue utilizing a space sensor: 3QFY12 -Successfully demonstrated the capability to provide real-time three-dimensional (3D) data used to cue Space Tracking and Surveillance System (STSS) and Pacific Tracker and text cues to Sea-based X-band radar (SBX) during a real-world event: 3QFY12 -Successfully supported simulated Aegis Launch-On-Remote engagements utilizing 3D track formation, track reporter, acquisition cue, and reverse cue prototypes processing live STSS and space sensor data during FTM-16E2a and FTM-18: 3QFY12 -Performed analytical trade studies, and algorithm performance assessments using live data collects from current sensors and simulations of future and current sensors to examine improvements for ballistic cueing and three-dimensional track formation by increasing predicted burn out state vector performance, decreasing burn-out state vector report times, leveraging infrared sensor data contribution to bulk filtering and discrimination, and improving tasking and battle management functions: 1QFY12-4QFY12 	40.351	51.860	0.000

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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>-Developed a Precision Tracking Space System (PTSS) - Command, Control, Battle Management and Communications (C2BMC) Interface Control Document Part II utilizing cooperative study efforts throughout the year with PTSS: 1QFY12-4QFY12</p> <p>-Established discrimination functionality within an advanced C2BMC prototype to explore raid performance gains: 1QFY12-4QFY12</p> <p>-Defined and assessed technical approaches for advanced C2BMC capability against ballistic missile threats, including infrared/ radio frequency sensor fusion techniques, battle management decision logic, and measurement and state vector data processing: 1QFY12 - 4QFY12</p> <p>-Investigated advanced sensor research management, remote optical characterization, and real-time missile classification algorithms through Small Business Innovative Research Phase 2 and Rapid Integration Fund awards: 1QFY12 - 4QFY12</p> <p>-Advanced University research on agent-based architecture constructs and incorporated independent assessments of prototype framework: 1QFY12-4QFY12</p> <p>FY 2013 Plans:</p> <p>-Complete maturation and testing of new BMDS Overhead Persistent Infrared (BOA) baseline release to support Spiral 8.2 integration and testing</p> <p>-Complete requirements allocation and specification for advanced C2BMC technologies to support European Phased Adaptive Approach (EPAA) Phase 3/4 requirements</p> <p>-Complete remote sensor technologies and STSS integration prototype development and evaluation</p> <p>-Identify, refine, and develop representative models for use in simulation exercises, associated operations in flight tests, experiments, and performance assessments of advanced algorithms and battle management techniques using infrared and radio frequency sensors</p> <p>-Develop advanced algorithms for infrared and radio frequency data fusion, sensor cueing and tasking, discrimination, and hit assessment</p> <p>-Enterprise Sensors Laboratory: Complete new OPIR sensor integration to expand the RF sensor cueing capability of BOA. This capability will improve the raid capacity of the RF sensors</p> <p>-Enterprise Sensors Laboratory: Initiate development for the first application of infrared sensor cueing</p> <p>-Enterprise Sensors Laboratory: Initiate algorithm development for hit assessment and continue mid-course tracking algorithm improvements and boost phase tracking algorithm enhancements</p> <p>-Award a Spiral 8.4 contract to support EPAA Phase 3 requirements and initiate engineering design and development</p> <p>FY 2014 Plans:</p> <p>FY 2014 plans transferred to Program Element 0603896C, Budget Project MD01</p>				
Title: Advanced Concepts & Performance Assessment		0.000	5.920	6.919
Description: N/A				

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> The FY 2012 effort for Advanced Technology Modeling and Simulation was contained in Advanced Research and Enhanced Command, Control, Battle Management and Communications within budget project MD25.</p> <p><i>FY 2013 Plans:</i> -Beginning in FY 2013, Advanced Technology Modeling and Simulation is centralized in this accomplishment area for efficiencies and budget clarity. -Develop common modeling and simulation infrastructure, tools, and analysis capabilities that integrate with Ballistic Missile Defense System (BMDS) modeling and simulation architectures for the Standard Missile-3 Block IIB and future variant government reference concepts. -Create and integrate BMDS Phase III/IV system modeling and simulation products into BMDS modeling and simulation architectures for SM-3 IIB, Directed Energy, and University Research. -Conduct internal benchmarking simulation exercises and yearly internal modeling and simulation reviews to drive analysis and model requirements for future concepts.</p> <p><i>FY 2014 Plans:</i> - Beginning in FY 2014, Advanced Technology Modeling and Simulation is re-titled to Advanced Concepts & Performance Assessment to more accurately represent the planned and past accomplishments - Work with the BMDS Architect and Systems Engineer to provide realistic assumptions, design concepts, models and assessments for technology items included within the future BMDS, elements, and component concepts - Provide technology concepts and assessments for next generation interceptors and kill vehicles, advanced discriminating sensors, and directed energy systems - Provide rapid assessments of innovative technology to expand the trade space evaluated and increase early identification of promising technology investment opportunities - Focus research and engineering activities from university and small business partners to identify suitable technology and concepts that improve BMDS performance by providing a rapid innovation model based engineering test bed - Reduce time to translate innovative technology into BMDS capability by providing integrated models of emerging concepts that characterize key parameters and expected performance to shape future technology investments and inform the BMDS architect</p>				
<p><i>Title:</i> Discrimination Sensor Technology</p> <p><i>Description:</i> Starting in FY 2014, Discrimination Sensor Technology is a new focus area in the BMD Technology Program Element and includes, but is not limited to, content previously included in the Advanced Remote Sensor Technology Program Element, 0604886C, Budget Project, MD95. The development of advanced algorithms for discrimination that began under</p>		0.000	0.000	77.305

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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
the Enhanced, Command, Control, Battle Management and Communication focus area will continue in FY 2014 under the Discrimination Sensor Technology focus area.				
<p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Evaluate and research discrimination requirements and identify technologies that significantly increase the ability of the current BMDS to identify lethal and non-lethal threat objects - Evaluate and research emerging technology that enable game changing discrimination improvements for incorporation into next generation interceptors, kill vehicles, and directed energy systems - Assess and characterize sensor components and sensor systems capable of precision tracking and advanced discrimination through laboratory, ground, and flight tests - Incorporate discrimination sensor field test measurements into models and simulations to anchor capability improvements - Conduct Near Field Infrared Experiment (NFIRE) On-Orbit Operations and perform cooperative tests with other overhead assets to collect baseline sensor capability data - Conduct analysis of sensor data from Space Tracking and Surveillance System (STSS), NFIRE, and Overhead Persistent Infrared (OPIR) observations, both individually and combined to identify advanced phenomenology and techniques to aid future architectures - Mature through analysis, demonstration, and test the critical radiation hard technologies necessary to enable future very high altitude and space based-sensing options - Develop and test real time advanced algorithms for dim target detection and tracking, discrimination support, hit assessment, and wideband infrared sensor data and exploitation - Initiate and conduct performance assessments and concept evaluations for advanced discriminating sensor options to include alternative sensor payload configurations - Begin the design of a discriminating sensor test platform to provide a technology test bed for discrimination sensors, detectors and advanced discrimination algorithms, and compatibility with directed energy systems 				
<p>Title: Weapons Technology</p> <p>Description: Starting in FY 2014, Weapons Technology is a new focus area in the BMD Technology Program Element and includes, but is not limited to, content previously included in the Directed Energy Research Program Element, 0603901C, Budget Project, MD69.</p>		0.000	0.000	83.470

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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Demonstrate the efficiency, producibility, and scaling potential of candidate laser technology - Demonstrate a 10 kilowatt (kW) subscale Diode Pumped Alkali Laser System (DPALS) with high efficiency and excellent beam quality - Improve operability and performance of the DPALS to increase average laser power, increase laser system efficiency, measure beam quality and reduce risks to system performance from chemical interactions - In conjunction with the Defense Advanced Research Projects Agency (DARPA), demonstrate a 30 kW fiber combining laser scalable to high power with high efficiency and near-ideal beam quality (to efficiently deliver photons to targets at long range). - Conduct experiments using a high altitude, low mach platform to validate high altitude, low mach directed energy lethality models - Measure optical turbulence to validate model predictions that a high altitude, low mach platform can meet the low jitter requirements for the next generation high altitude directed energy system - Initiate design to address size, weight, and power platform constraints to integrate a 200 kilowatt (kW) class directed energy laser on a high altitude, low mach platform - Identify and assess technology and interceptor architectures that balance requirements between the Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) and the weapon system(s) - Identify component technology requirements, develop, demonstrate and assess technology designs for directed energy systems; high-speed interceptor propulsion; miniaturized light-weight structures, thermal protection systems and avionics; optimal guidance and control technologies; survivable and secure electronics; long-range, high-data rate communications systems and novel launcher systems. 				
<p>Title: Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance</p> <p>Description: Advanced C4ISR is a new accomplishment area in FY 2014, but is a derivation of work accomplished in FY 2013 in the Sensors (0603907C) and C2BMC (0603896C) Program Elements</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans:</p>		0.000	0.000	43.000

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
N/A				
<p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Develop and mature technology for integrated track processing and battlefield decision aids to facilitate integration of the Services command and sensor networks into the Ballistic Missile Defense System (BMDS) - Develop advanced X-band radar target acquisition and discrimination capabilities against threats launched over extended geographical regions on wide range of flight trajectories - Demonstrate C2BMC capabilities to task X-band radar and pass target data to all BMDS weapon systems 				
<p>Title: Advanced Research</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Awarded Advanced Research contracts to domestic universities for innovative early intercept investigations -Managed and oversaw ongoing domestic university research projects in: <ul style="list-style-type: none"> --Johns Hopkins University: Parameterized Fragmentation Models for Intercept optical Signatures --Investigated fragmentation of debris during intercept event to determine metrics for kill assessment. --Alabama A&M University: Innovative Methods for Computational Algorithms Utilizing Reconfigurable Devices -- Significant progress implementing algorithm solutions on Field Programmable Gate Arrays (FPGA) --University of Alabama Huntsville: Rapid Response Architectures -- Optimized and automated the integration, use, and performance metrics of multiple weapon systems into integrated flexible architectures to optimize battlefield management --University of Alabama Huntsville: Computational Aero-Optics Simulation Development -- Investigated algorithms to assess and predict aero-optic effects on sensor and laser systems --United States Air Force Academy: Active Coherent Beam Combining of High Power Fiber Lasers -- Investigated scalable, robust and reliable active coherent beam combining technology for high-power laser arrays using a hologram to interrogate output wave front and correct optical path length --United States Air Force Academy: Scaling DPAL to kilowatts - Developed state-of-the-art technique for scaling of laser systems to KW output power levels while maintaining optical efficiency greater than 50% --Auburn University: Radar Signal Processing for Multi-Sensor Tracking of Multiple Targets -- Investigated and evaluated algorithms for multi-scan joint probabilistic data association for multiple maneuvering targets in a densely cluttered environment using multiple sensors --Clemson University: Power Scaling of High Power Fiber Lasers -- Investigated methods to successfully control the index of refraction of the active core glass 		20.816	18.225	19.188

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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>--University of Illinois: Intelligent and Robust Control for Optimal Engagement Planning -- Developed evolutionary algorithms to determine discrete parameters and continuous control time histories for launch time, launch site, and thrust direction programming for maneuvers of each vehicle</p> <p>--University of Southern California: Adaptive Spatiotemporal Image Processing-Based Clutter Suppression -- Developed a spatial-temporal filter that rejects clutter and simultaneously compensates for jitter</p> <p>--Texas A&M University: Solid Propellant Additives for DACS Applications -- Analyzed new additives for self extinguishing propellant</p> <p>Managed and oversaw ongoing international University-to-University research (UUR) projects:</p> <p>--University of Nebraska Lincoln / University of Bordeaux, France : Fast Deposition of Diamond Films in Open Air for Thermal Management, Wear Resistance, and Corrosion Resistance -- Achieved diamond film deposition areas at a rate ten times commercialized methods with close to 100% purity</p> <p>--University of Nebraska Lincoln / University of Rouen, France: Polymer Parts with Tailored Microstructure Distributions Optimized for an Application -- Demonstrated ability to control parameters both in laboratory and in rapid prototyping systems to a level allowing direct transfer of laboratory settings of specific polymer mixtures providing best uniform results into rapid prototyping</p> <p>--North Carolina State University / Czech Technical University: Algorithm Development for Multi-Modality Image Reconstruction -- Investigated algorithm framework for modeling integrated target recognition and tracking</p> <p>-Conducted Advanced Technology Innovation Broad Agency Announcement (ATI BAA) solicitation for identifying potentially breakthrough research on missile defense related technology with private industry, qualified accredited educational institutions, and nonprofit organizations. The following tops were awarded:</p> <p>--Target handoff and resource management for multi-sensor multi-target tracking systems</p> <p>--Combustion characterization of fine hypersonic sprays</p> <p>--Infrared analysis in counterfeit parts detection and supply chain validation</p> <p>--High altitude low mach platform vibration characterization experiments</p> <p>--High altitude turbulence, boundary layer disturbance and beam propagation jitter characterization experiments</p> <p>--Light weight beam control technology concepts</p> <p>-Developed common modeling and simulation infrastructure, tools, and analysis capabilities that integrate with Ballistic Missile Defense System (BMDS) modeling and simulation architectures for advanced technology development</p> <p>-Conducted System Engineering to identify initiatives to defend against current and future threats</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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<p>-Managed the selection process of the Small Business Innovation Research (SBIR) and Technology Applications programs to assist MDA-funded technology developers in finding and entering technology transfer opportunities to missile defense applications</p> <p>FY 2013 Plans:</p> <p>-Award Advanced Research contracts to domestic universities for innovative early intercept investigations</p> <p>-Invest in second and third year of ongoing university contracts</p> <p>-Sponsor breakthrough technology and innovative solutions from private industry, qualified accredited domestic educational institutions, and nonprofit organizations, using the Advanced Technology Innovation Broad Agency Announcement (BAA)</p> <p>-Manage the Small Business Innovation Research (SBIR) and Technology Applications programs to assist MDA-funded technology developers in finding and entering technology transfer opportunities to missile defense applications</p> <p>-Conduct System Engineering to identify initiatives and technology to defend against current and future threats</p> <p>FY 2014 Plans:</p> <p>-Award Advanced Research contracts to domestic universities for innovative investigations to enlarge the battle space and enhance discrimination and raid handling</p> <p>-Invest in ongoing University research:</p> <p>--Clemson University: Power scaling capability of High Power Fiber Laser Research</p> <p>--Texas A&M University: Solid Propellant Additives for Divert Attitude Control System (DACs) Applications</p> <p>--Tuskegee University: Mechanical properties, fracture behavior and failure mechanisms of selective composites for re-entry vehicles</p> <p>--University of Illinois: Decision Theory for Optimal Engagement Planning</p> <p>--University of Tennessee: Target Handoff and Resource Management for Multi-Sensor Multi-Target Tracking System</p> <p>--North Carolina State University/Czech Republic Institute of Physics: Multi-sensor algorithm development to track space objects and debris</p> <p>--U.S. Air Force Academy: Scaling Diode Pumped Alkali Lasers for higher power output.</p> <p>--Alabama A&M University: Computational algorithms using reconfigurable logic devices.</p> <p>--University of Alabama Huntsville: Computational studies of aero-optic effects of higher Reynolds numbers gas flows over sensor structures.</p> <p>--University of Southern California: Algorithms for detection, track, and classification of objects in a high debris environment.</p> <p>--Texas A&M University: Hybrid Waveguide/Micro Electro Mechanical System Optical Signal Processor</p> <p>-Sponsor breakthrough technology and innovative solutions from private industry, qualified accredited domestic educational institutions, and nonprofit organizations, using the Advanced Technology Innovation Broad Agency Announcement (BAA), to include research in:</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 3: <i>Advanced Technology Development (ATD)</i>		R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>		PROJECT MD25: <i>Advanced Technology</i>
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -- Lightweight optics -- Passive jitter control using mechanical isolation -- Lightweight rigid optics mounts -- Beam control optimization -- Interceptor Technology -- Sensor Technology <p>-Partner with industry, the High Energy Laser Joint Technology Office, Universities and National Laboratories through advanced technology initiatives to improve sensor technology, high energy laser acquisition, tracking, and pointing technology, and lightweight fiber laser amplifiers</p> <p>-Conduct research and material solution analysis to identify initiatives and technology to include missiles, sensors, and command and control components in the defense against current and future threats</p> <p>-Leverage University-to-University (UUR) International Research opportunities with allied nations to enhance BMDS Advanced Technology initiatives and build stronger relationships with Missile Defense Agency (MDA) North Atlantic Treaty Organization (NATO) partner countries and our ally nations</p> <p>- Manage the selection process of the Small Business Innovation Research (SBIR) and Technology Applications programs to assist MDA-funded technology developers in finding and entering technology transfer opportunities to missile defense applications</p> <p>-Conduct System Engineering to identify initiatives and technology to defend against current and future threats</p>				
<p>Title: Small Business Innovation Research (SBIR) Program Support</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Executed the FY 2012 Small Business Innovation Research/Small Business Technology Transfer (SBIR/STTR) MDA requirements-driven investment strategy including eight research areas, forty-three SBIR/STTR topics and associated budgets -Awarded 123 Phase I SBIR and 14 Phase I STTR contracts leading to 90 follow-on prototype development efforts -Awarded 91 Phase II SBIR and 8 Phase II STTR contracts intended to transition to C2BMC, interceptor and space systems -Augmented promising Phase II programs to advance Technology Readiness Levels (TRLs) and aid transition/commercialization -Conducted Phase II Transition invitation and assessments with additional augmentations pending 		6.317	0.000	0.000

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
-Generated and received approval for FY 2013 SBIR/STTR investment strategy including eight Research Areas, SBIR topics, STTR topics, and associated budgets -Conducted outreach activities to mentor small business and foster best practices to increase the likelihood of successful technologies being transitioned into the BMDS -Conducted Technology Applications Reviews and Business Focus Workshops to assist MDA-funded technology developers find and enter technology transfer opportunities beyond MDA applications FY 2013 Plans: Small Business Innovation Research Program Support effort transfers to the Advanced Research accomplishment within this budget project MD25 beginning in FY 2013 to achieve efficiencies. FY 2014 Plans: N/A			
Accomplishments/Planned Programs Subtotals	67.484	76.005	229.882

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>
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	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
• 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
• 0603901C: <i>Directed Energy Research</i>	49.563	46.944	0.000		0.000	0.000	0.000	0.000	0.000	0.000	96.507
• 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

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD25: <i>Advanced Technology</i>
---	--	--

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>
• 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
• 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	0.000	58.742	0.000		0.000	0.000	0.000	0.000	0.000	0.000	58.742

Remarks

D. Acquisition Strategy

The acquisition strategy to conduct this technology development effort consists of partnering with Federally Funded Research and Development Centers and University Affiliated Research Centers. The Missile Defense Agency will also award contracts to industry and universities via the Advanced Technology Innovation Broad Agency Announcement and competitive procurements. This Program Element also shapes future BMDS acquisition decisions by advancing and documenting the technology readiness levels of emerging and developing technology, while simultaneously assessing the performance and contributions of the technology to the BMDS architecture.

E. Performance Metrics

N/A

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD85: <i>Common Kill Vehicle</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
MD85: <i>Common Kill Vehicle</i>	-	0.000	0.000	70.000	-	70.000	70.300	70.200	70.100	69.900	0.000	350.500

[#] 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

Development of common kill vehicle architecture and interfaces could lower cost and raise reliability of ballistic missile defense interceptors. Common architecture and interfaces would provide development and fielding of a common kill vehicle for Ground Based Interceptors (GBI) and Standard Missile-3 (SM-3) variants, while reducing development risk and decreasing costs. A common kill vehicle could also facilitate rapid upgrades and replacement of key components, and also establish a scalable foundation for the production and performance for a common kill vehicle approach for both single threat negation and evolution to a volume kill concept to destroy several lethal objects from a single missile, which would provide the warfighter the ability to reevaluate shot doctrine and inventory for GBIs and SM-3 variants. If determined to be feasible, these combined efforts will improve probability of negating large raid sizes.

The common kill vehicle development program will focus on developing and testing key technologies and concepts to include:

- High performance, lightweight maneuvering propulsion
- Long range acquisition seekers
- Improve seeker discrimination capability
- Engagement management algorithms
- Shipboard compliant propulsion and leak mitigation systems
- Non-proprietary software, algorithms, models and simulation

The Missile Defense Agency is executing Public Law 112-239, the National Defense Authorization Act for Fiscal Year 2013, which directed the development of a long-term plan for the Exo-Atmospheric Kill Vehicle (EKV) that addresses both modifications and enhancements to the current EKV and options for the competitive development of a next generation EKV for the GBI and any other interceptor that might be developed for the defense of the United States against long-range ballistic missiles. We will define the technical parameters and performance capabilities for the next generation EKV which will inform the development of a common kill vehicle, its architecture and common interfaces.

The Missile Defense Agency plans to:

- Investigate processes and procedures to streamline manufacturing focusing on high tolerances to production processes and supply chain variability and inherent reliability
- Optimize integration and exploit BMDS architecture and sensors of today and tomorrow, to include increased discrimination

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD85: <i>Common Kill Vehicle</i>
---	--	--

- Leverage relevant kill vehicle development activities and technology across the Department of Defense
- Maximize commonality of sub-systems and components for the next generation EKV and future kill vehicle development
- Meet Department of Defense criteria, as established in the February 2010 Ballistic Missile Defense Review, for affordability, reliability, suitability and operational effectiveness to defend against evolving and future threats from long-range missiles
- Evaluate potential benefits and drawbacks of options for both unitary and multiple kill vehicles

Development of the common kill vehicle architectures and interfaces provides the Missile Defense Agency (MDA) the opportunity to balance Ballistic Missile Defense System (BMDS) architecture in light of the evolving threat and to do so at a lower cost while potentially improving performance. By consolidating future kill vehicle technology development efforts, MDA will work with industry primes and suppliers to define the best technical approach for a modular, open architecture that yields all the aforementioned improvements for reliability and performance at a lower cost. This modular open system approach could also increase opportunities for competition and international cooperation for all components with the common kill vehicle architecture. This technology leads to a new high performance, high reliability, highly producible common kill vehicle that could be ready before the end of the decade.

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

Title: Common Kill Vehicle	0.000	0.000	70.000
-----------------------------------	-------	-------	--------

Description: The Missile Defense Agency is developing common kill vehicle technology to address emerging threats and ensure the viability of the missile defense of our homeland. This is a continuation of the work started in FY 2013, as directed by Public Law 112-239, the National Defense Authorization Act for Fiscal Year 2013.

FY 2012 Accomplishments:
N/A

FY 2013 Plans:
FY 2013 accomplishments will be reported to Congress in the response to the request for a common kill vehicle technology development plan as established by Public Law 112-239, the National Defense Authorization Act for Fiscal Year 2013. This act directed the development of a long-term plan for the Exo-Atmospheric Kill Vehicle (EKV) that addresses both modifications and enhancements to the current EKV and options for the competitive development of a next generation EKV for the Ground Based Interceptor (GBI) and any other interceptor that might be developed for the defense of the United States against long-range ballistic missiles.

FY 2014 Plans:
We are executing key tasks focused on developing common kill vehicle technology for both the GBI and Standard Missile-3 (SM-3) missiles to address the evolving and future threat. These investments in a common kill vehicle approach will help ensure the viability of our homeland ballistic missile defenses.

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD85: <i>Common Kill Vehicle</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
Our overall strategy is to define a modular, open system kill vehicle architecture that improves performance, common interfaces and for standardized upgrades and replacement of key components.			
Specifically, we plan to: - Make near term investments in interceptor technology that accelerate our ability to use a common kill vehicle in a way that balances lethal object discrimination, limited inventory and cost per kill - Define a kill vehicle architecture, common component interfaces, and standards that streamline modifications to kill vehicles, improves performance, and broaden the vendor base for future upgrades - In parallel, investment in key technology development areas will be made to increase probability of kill and reliability of interceptors, including propulsion, inertial and alternative navigation, batteries and sensor components - Focus technology investments on kill vehicle component and sub-systems that support long range acquisition and discrimination, long operation times, multiple discreet events, precision attitude control, safe operation and minimal kill vehicle mass - Other investment areas include: engagement management techniques and non-proprietary algorithms, volume kill techniques and enhanced lethality			
Accomplishments/Planned Programs Subtotals	0.000	0.000	70.000

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
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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

Remarks

D. Acquisition Strategy
 The Missile Defense Agency's FY 2014 budget reflects an emphasis on the viability of our homeland ballistic missile defenses against future threat technology advancements. The acquisition strategy to conduct this technology development effort consists of three focus areas. First, leverage the technical expertise of Federally Funded Research and Development Centers, University Applied Research Centers, and Universities and government laboratories. Second, conduct risk reduction activities to identify and mature the technology necessary to increase the reliability and performance of our kill vehicles using our Advanced Technology Innovation

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD85: <i>Common Kill Vehicle</i>
<p>Broad Agency Announcement and competitive procurements. Third, through competition with missile integration contractors, development of a common kill vehicle architecture and interfaces with follow on competitive design of volume kill concepts incorporating lightweight kill vehicles and discrimination capability.</p>		
E. Performance Metrics N/A		

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</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>	-	0.437	3.970	9.321	-	9.321	8.249	9.017	10.356	12.101	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

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)

	FY 2012	FY 2013	FY 2014
Title: Program Wide Support	0.437	3.970	9.321
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	0.437	3.970	9.321

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

N/A

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603175C: <i>Ballistic Missile Defense Technology</i>	PROJECT MD40: <i>Program Wide Support</i>

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

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603274C: <i>Special Program - MDA Technology</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	-	61.371	36.685	40.426	-	40.426	42.208	45.676	46.465	47.074	Continuing	Continuing
MD81: <i>Special Programs - MDA Technology</i>	-	61.371	36.685	40.426	-	40.426	42.208	45.676	46.465	47.074	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

N/A

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	61.371	36.685	39.736	-	39.736
Current President's Budget	61.371	36.685	40.426	-	40.426
Total Adjustments	0.000	0.000	0.690	-	0.690
• 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	0.690	-	0.690

Change Summary Explanation

FY 2014 adjustments reflect realignment to Department of Defense priorities.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</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	-	49.563	46.944	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	96.507
MD69: <i>Directed Energy Research</i>	-	46.243	44.560	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	90.803
MD40: <i>Program-Wide Support</i>	-	3.320	2.384	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.704

[#] 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

Starting in FY 2014, the Directed Energy Research (DER) Program Element, 0603901C, transfers to the Ballistic Missile Defense Technology Program Element, 0603175C. The internal realignment of DER funds into the BMD Technology Program leverages technology interdependencies and gains oversight efficiencies.

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) is conducting research into the transmission and control of directed energy largely above the atmosphere for non-intercept missile defense applications and ultimately boost phase intercepts. The agency works in collaboration with the Office of the Assistant Secretary of Defense for Research and Engineering, the Defense Advanced Research Projects Agency and the High Energy Laser Joint Technology Office in a systems engineering based strategy for the research, development, test and evaluation of high energy laser technologies.

To transition to the next generation high power directed energy platform, MDA is pursuing two promising laser technologies in a competitive environment. These candidate laser systems offer a path to high efficiency, electrically-driven, compact, light-weight high energy lasers for multiple missile defense applications including discrimination and boost phase defense. MDA is pursuing the Diode Pumped Alkali Laser System and fiber combining laser technologies based on their efficiency and scaling potential. A 200 kilowatt (kW) class flight qualifiable laser prototype will be built and tested based on the selected technology for non-intercept Ballistic Missile Defense System (BMDS) enhancement. In parallel with laser development, a surrogate high altitude, long endurance platform will be instrumented to collect high altitude flight environment data to inform the design and flight compatible packaging of the high powered laser payloads. MDA is also investing in a number of advanced technology initiatives which will support the design of the next-generation airborne laser platform.

The Directed Energy Research contributions to the Prioritized Capabilities List include: Prevent Attack - counter emerging or advanced air and missile threats and Persistent Surveillance - improve birth-to-death tracking, identification and targeting.

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).

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>
---	--

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	49.943	46.944	47.865	-	47.865
Current President's Budget	49.563	46.944	0.000	-	0.000
Total Adjustments	-0.380	0.000	-47.865	-	-47.865
• 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	2.612	0.000			
• SBIR/STTR Transfer	-2.992	0.000			
• Other Adjustment	0.000	0.000	-47.865	-	-47.865

Change Summary Explanation

FY 2014 funding was transferred to the BMD Technology (0603175C) Program Element.

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD69: <i>Directed Energy Research</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
MD69: <i>Directed Energy Research</i>	-	46.243	44.560	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	90.803

[#] 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

The Missile Defense Agency (MDA) is partnering with Federally Funded Research and Development Centers (FFRDCs) and the Defense Advanced Research Projects Agency (DARPA) to pursue advanced laser technologies such as the Diode Pumped Alkali Laser System (DPALS) and fiber laser beam combining systems in a competitive environment, and will monitor other emerging laser technologies for investment and development.

FY 2014 Base Plans have been transferred to Program Element 0603175C, Budget Project MD25.

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

	FY 2012	FY 2013	FY 2014
Title: Directed Energy Research	46.243	44.560	0.000
Description: Laser Technology Development/Airborne Laser Test Bed Closeout			
FY 2012 Accomplishments:			
<ul style="list-style-type: none"> - MDA completed Airborne Laser Test Bed testing and collated/archived test data and documentation for future MDA and DoD directed energy program use - Completed ALTB directed energy model validation and verification - Prepared and stored the ALTB and completed disposition of more than 24,000 property line items valued at over \$200M, enabling maximum DoD and Directed Energy re-utilization of high-value assets - Demonstrated the architectural feasibility of the Diode Pumped Alkali Laser System (DPALS) and combined fiber lasers for high power applications - Improved DPALS laser power by approximately 3 times and efficiency of approximately 50 percent over the past year. The program achieved a power milestone. - Collaborated with the Defense Advanced Research Projects Agency (DARPA) on fiber combining laser development to achieve a technology first laser output power of 2.5 kilowatts 			

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</i>	PROJECT MD69: <i>Directed Energy Research</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2012	FY 2013	FY 2014
<p>- Investigated lethality, countermeasures, beam propagation, modeling and laser beam combining as well as additional innovative technologies</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Make investments to mature high power directed energy technology -Develop next-generation kilowatt-class fiber amplifiers -Develop high power diode-pumped amplifier systems -Develop fiber laser beam combining techniques to validate laser combining architectures -Evaluate concepts for improving technical readiness, reducing risk areas and improving next-generation platform reliability -Estimate life-cycle costs and assess viability for further development -Partner with the High Energy Laser Joint Technology Office, Universities and National Laboratories to improve high-power laser optics, optical coatings and directed energy modeling and simulation -Conduct experiments to characterize the high altitude, low mach flight environment -Remove/de-militarize ALTB hardware, fixtures, tooling and government furnished property <p>FY 2014 Plans:</p> <p>FY 2014 plans have been transferred to Program Element 0603175C, Budget Project MD25.</p>			
Accomplishments/Planned Programs Subtotals	46.243	44.560	0.000

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

N/A

Remarks

D. Acquisition Strategy

The Missile Defense Agency (MDA) Fiscal Year 2014 budget submission reflects an emphasis on high power laser technology research and development and application. The acquisition strategy to conduct this technology development effort consists of three pillars. First, leverage the technical expertise of National Laboratories, Federally Funded Research and Development Centers (FFRDCs) and University Applied Research Centers (UARCs). Second, continue to leverage relevant existing contracts within limits of the Competition in Contracting Act (CICA), taking into account contractor past performance, scope, ceiling and period of performance. Third, for new technology initiatives, seek industry solutions via the Advanced Technology Innovation Broad Agency Announcement (BAA) for competitive procurements.

E. Performance Metrics

N/A

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603901C: <i>Directed Energy Research</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>	-	3.320	2.384	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	5.704

[#] 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)

	FY 2012	FY 2013	FY 2014
Title: Program Wide Support	3.320	2.384	0.000
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	3.320	2.384	0.000

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

N/A

UNCLASSIFIED

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 3: <i>Advanced Technology Development (ATD)</i>	PE 0603901C: <i>Directed Energy Research</i>	MD40: <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</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	-	28.456	224.077	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	-	28.456	212.704	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	0.000	11.373	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.373

[#] 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

No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	13.443	224.077	295.248	-	295.248
Current President's Budget	28.456	224.077	0.000	-	0.000
Total Adjustments	15.013	0.000	-295.248	-	-295.248
• 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	15.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.013	0.000	-295.248	-	-295.248

Change Summary Explanation

No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</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
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	-	28.456	212.704	0.000	-	0.000	0.000	0.000	0.000	0.000	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

N/A

A. Mission Description and Budget Item Justification

No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.

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

	FY 2012	FY 2013	FY 2014
Title: Standard Missile-3 Block IIB (SM-3 IIB)	28.456	212.704	0.000
Description: N/A			
FY 2012 Accomplishments:			
<ul style="list-style-type: none"> - Conducted lightweight structural component design verification testing to demonstrate the ability to produce and incorporate lightweight components into the SM-3 Block IIB missile. - Successful missile system engineering trades resulted in down-select to a smaller set of viable missile concepts. Completed the alternative missile concepts review which described the missile concepts being analyzed for final concept selection. - Upgraded missile digital models and simulations to support comprehensive missile and BMDS trades and definition of SM-3 Block IIB performance requirements. - Began development of Request for Proposal (RFP) package for the competition of the design and development effort that will begin in FY 2014. - Initiated fabrication improvements on analog large format, two color focal plane arrays with the goal to increase overall yield and decrease SM-3 Block IIB (and other Standard Missile variants) kill vehicle seeker cost and schedule risk. - Conducted component development for technical risk reduction areas such as divert and attitude control systems, and third stage rocket motor that are common to the SM-3 IIA and IIB programs. 			
FY 2013 Plans:			

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	PROJECT MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>
---	---	--

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

<ul style="list-style-type: none"> - Continue development of Request for Proposal (RFP) package and begin source selection for competition for SM-3 Block IIB Product Development Phase that will begin in FY 2014. - Continue improvements to analog focal plane array producibility which also benefits other Standard Missile variants. - Continue development and demonstration of enabling components for divert and attitude control system concepts and for third stage rocket motor technologies, including an innovative solid propellant attitude control system. - Continue concept definition and program planning activities with three industry teams (Boeing, Lockheed Martin and Raytheon). The industry teams will each select a single design for detailed analysis, modeling, and program planning activities that will continue through the remainder of the year. - Initiate activities for Aegis Weapon System, canister, and Vertical Launch System modifications necessary to support the SM-3 Block IIB interceptor. <p>FY 2014 Plans: No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.</p>	FY 2012	FY 2013	FY 2014
Accomplishments/Planned Programs Subtotals	28.456	212.704	0.000

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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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

Remarks

D. Acquisition Strategy

No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.

E. Performance Metrics

N/A

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</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	11.373	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	11.373

[#] 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, rents and utilities, data and unified communications support, supplies and maintenance, logistics and central property management of equipment, and similar operating expenses. Also includes legal settlements. In keeping with congressional intent, PWS is allocated on a pro-rata basis and therefore, fluctuates by year based on the total MDA budget.

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

	FY 2012	FY 2013	FY 2014
Title: Program Wide Support	0.000	11.373	0.000
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: No funding is requested in fiscal year 2014 for SM-3 IIB. The department is evaluating alternatives to hedge against future threat technology advancements. Funding for this effort can be found in the BMD Technology PE 0603175C, budget project MD85.			
Accomplishments/Planned Programs Subtotals	0.000	11.373	0.000

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 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</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

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</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	433.468	381.041	316.929	268.990	-	268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
MD07: <i>THAAD</i>	398.748	371.516	229.869	228.692	-	228.692	174.235	181.607	180.303	162.331	Continuing	Continuing
MC07: <i>Cyber Operations</i>	-	0.000	0.000	0.530	-	0.530	0.539	0.548	0.557	0.574	Continuing	Continuing
MT07: <i>THAAD Test</i>	-	0.000	70.928	24.547	-	24.547	118.946	32.415	65.559	76.563	Continuing	Continuing
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	34.720	1.156	1.145	1.091	-	1.091	1.108	1.219	1.240	1.257	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	8.369	14.987	14.130	-	14.130	15.073	11.687	14.829	14.188	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 funding realigned to Operation and Maintenance for Ballistic Missile Defense System Terminal Defense.

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 Terminal Defense Program Element includes the Terminal High Altitude Area Defense (THAAD) development program, Cyber Operations, THAAD System Test, support of PATRIOT (Phased Array Tracking Radar Intercept Of Target) Advanced Capability-3 (PAC-3) participation in Missile Defense Agency (MDA) activities, and Program Wide Support (PWS).

THAAD provides the only air transportable, fast reaction capability for the warfighter to provide area coverage against Short and Medium Range Ballistic Missiles within four hours of arrival. The THAAD element includes five major components: Interceptors, Launchers, Army Navy/Transportable Radar Surveillance - Type 2 (AN/TPY-2) Radars, THAAD Fire Control and Communication (TFCC), and THAAD Peculiar Support Equipment. THAAD delivered Battery #1 in FY 2009 and Battery #2 in FY 2010 to the U.S. Army at Fort Bliss, Texas for initial fielding and training. THAAD has completed the development of the THAAD 1.0 configuration and is developing the THAAD Build 2.0 capability. Continued development and integration will provide for enhanced debris mitigation, improved interoperability with other Ballistic Missile Defense System (BMDS) elements, and development of training devices to support the THAAD Institutional Training Base.

Cyber Operations sustains 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

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>
---	--

of Action and Milestones (POA&Ms) for MDA Command and Control Battle Management and Communications (C2BMC) mission systems and supports THAAD certification to operate in the BMD System.

THAAD System Test conducts Ballistic Missile Defense System (BMDS) Flight Tests and Ground Tests with other BMDS elements (including BMDS Command Control / Battle Management and Communication, PATRIOT and Aegis) in accordance with BMDS Integrated Master Test Plan. THAAD System Test coordinates with Operational Test Agencies, conducts flight test operations, performs post-flight test reporting, and performs data distribution and data storage at Pacific Missile Range Facility and the Reagan Test Site.

PATRIOT Advanced Capability (PAC-3) is a U.S. Army short range BMDS that interfaces with the BMDS. MDA funds PATRIOT participation in BMDS interoperability integration efforts.

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	290.076	316.929	313.212	-	313.212
Current President's Budget	381.041	316.929	268.990	-	268.990
Total Adjustments	90.965	0.000	-44.222	-	-44.222
• 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	101.784	0.000			
• SBIR/STTR Transfer	-10.819	0.000			
• Other Adjustment	0.000	0.000	-44.222	-	-44.222

Change Summary Explanation

The FY 2014 funding realigned to Operations and Maintenance for Ballistic Missile Defense System Terminal Defense.

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</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
MD07: <i>THAAD</i>	398.748	371.516	229.869	228.692	-	228.692	174.235	181.607	180.303	162.331	Continuing	Continuing
Quantity of RDT&E Articles	12	38	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

Terminal High Altitude Area Defense (THAAD) Development activities (1.0) focused on the design, development, testing and verification of a significant, fundamental capability to engage threats both inside and outside of the atmosphere in their terminal phase of flight. This capability includes engagements against short to medium-range ballistic missiles and asymmetric threats. Development of THAAD's next incremental capability (2.0) will enhance and extend the current 1.0 capability and be delivered as part of THAAD's acquisition/development strategy.

THAAD 1.0 (Baseline Capability Development) provided the fundamental capability against short and medium-range Ballistic Missiles and asymmetric threats inside and outside the atmosphere by FY 2012. This development completed with: 1) Ground and Flight Test of the weapon system against complex Re-entry Vehicles (RV), background clutter, and Medium-Range Ballistic Missile (MRBM) threats; 2) Ground and Flight Test of the initial Discrimination Capability; 3) Enhanced communication capability to support Link 16 compatibility with the Ballistic Missile Defense System (BMDS) and engagement coordination with other BMDS elements; and 4) Conditional Materiel Release.

THAAD 2.0 (Advanced Capability Development) expands the capability of THAAD 1.0 system. New THAAD capabilities include: 1) Launch on Link 16 BMD System Based Track providing the ability to initiate an engagement and launch THAAD interceptors using sensor data provided by BMDS sources outside the THAAD Battery; 2) Improving THAAD Weapons System performance in the presence of a high debris environment; 3) Expanding the defended area footprints by remote operation of THAAD Launchers; 4) Peer-to-peer engagement coordination with Aegis and PATRIOT weapon systems; 5) Software upgrades to maintain capability against evolving threats; 6) Message based regional engagement command functionality to process message content from Command and Control/Battle Management and Communications (C2BMC) to obtain direction for target engagement; 7) Weapon System Information Assurance mandatory updates; 8) Warfighter requested enhancements; and 9) Upgrades to maintain interface with other BMDS software builds.

In addition to THAAD Development, there are three planned tasks: THAAD Program Support, Program Operations, and Project Redwood.

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

THAAD Program Support (previously Maintenance, Training, and Transportation) provides institutional and unit training devices to support U.S. Army requirements based on the System Training Plan (STRAP) and provides maintenance and transportation to support THAAD development.

Program Operations (previously Program Management) provides strategic planning, program integration, cost estimating, contracting, financial management, internal reviews and audits, earned-value management and program assessments for the THAAD Program Office.

Project Redwood- Details at a Higher Classification is reported in accordance with Title 10, United States Code, Section 119 (a)(1) in the Special Access Program Annual Report to Congress.

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

	FY 2012	FY 2013	FY 2014
<p>Title: THAAD Development (previously Weapon Sys Engr Integ & Test)</p> <p align="right">Articles:</p> <p>Description: This task includes completion of THAAD 1.0 development and initiates development of THAAD 2.0. Flight and ground testing of this development is included in separate task (project); however, pre and post mission engineering analysis supporting testing is included in this task. In addition, it includes \$50.109 Million of Program Operations which has moved to the Program Operations (previously Program Management) accomplishment starting in FY 2014.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Delivered 38 Interceptors for Batteries #1 and #2 that were purchased with FY 2007 through FY 2012 funds -Completed integration of Extremely High Frequency (EHF) and Super High Frequency (SHF) communications capabilities into the THAAD weapon system -Continued in the design, development, qualification testing, release, field, and support incremental release of System Software Support (SSS) builds for each THAAD component -Continued the development of automated test tools for SSS activities -Provided real-time closed loop system and component testing utilizing THAAD hardware-in-the-loop (HWIL) facilities -Conducted pre-mission analysis of THAAD performance in FTI-01 and FTO-01, operational scenarios testing THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2. Analysis ensured mission range and public safety and generated system performance predictions for post mission comparisons -Conducted analysis of Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data collected during flight testing -Determined the impacts to Joint data link standard MIL-STD-3011 by assessing interoperability capabilities of THAAD system, concept of operations, and developed Software (SW) -Continued development of Netted Embedded Training to enable THAAD Battery participation in common training scenarios, near real time with other THAAD Batteries, lower tier units, other elements of the Ballistic Missile Defense System (BMDS) (through Distributed Multi-Echelon Training Systems) 	<p>198.569</p> <p>38</p>	<p>171.433</p> <p>0</p>	<p>142.146</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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> -Continued to develop, maintain, and integrate THAAD Integrated Simulation and Tactical Software (ISTS) into BMDS digital framework and conducted Verification, Validation and Accreditation (VV&A) for Simulation-Over-Live-Driver (SOLD), ISTS at the THAAD Evaluation Center (TEC) HWIL facility -Continued Models and Simulations (M&S) development to support Element and BMDS events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) -Updated THAAD interface specifications and interface control documents for required BMDS changes -Conducted threat assessments of the BMDS Adversary Development Package (ADP) -Continued THAAD interoperability planning with joint and coalition planning systems -Continued Ignition System Safety Review Board (ISSRB) testing of optical block re-design -Implemented Mandatory Information Assurance Updates and performed Information Assurance Vulnerability Assessments (IAVA) on all THAAD component software -Initiated THAAD Build 2.0 phase I development of non-organic intercept debris mitigation -Initiated the design and development to rehost, test, and qualify new Launcher Operating System to minimize Information Assurance vulnerabilities -Completed verification of Thermally Initiated Venting System 			
---	--	--	--

Variance Analysis: Increase from PB 2013 to PB 2014 includes the engineering redesign, integration, and ISSRB testing for the interceptor optical block, modifications to the instrumentation for flight test interceptors, test sets for interceptor stockpile reliability testing , and initiate Debris Mitigation capability.

FY 2013 Plans:

<ul style="list-style-type: none"> -Continue THAAD Build 2.0 development of non-organic intercept debris mitigation -Conduct post-mission analysis of THAAD performance in FTI-01, an operational scenario testing THAAD`s ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2 -Continue pre-mission analysis for FTO-01, an operational scenario further testing THAAD`s ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2. Analysis ensures mission range and public safety and generates system performance predictions for post mission comparison. -Continue integration and implementation of THAAD and its components in the BMDS through participation in MDA Ground Test Campaign and Performance Assessments to evaluate system performance and interoperability within the integrated BMDS -Continue integration and implementation of THAAD and its components in the BMDS through participation in Combatant Commander (COCOM) wargames and exercises -Design, develop, qualification test, release, and field annual release of Post Deployment Software Support (PDSS) to ensure continued performance and operation of fielded Batteries 			
--	--	--	--

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> -Implement Mandatory Information Assurance Updates and perform Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded Batteries -Develop software updates for Simulation-Over-Live Driver (SOLD) to enable testing and training of mass raid scenarios on tactical hardware and integrate into Ballistic Missile Defense System (BMDS) flight test and ground test campaign -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, and integration activities to ensure effective use of appropriated resources -Provide contractor program management, and subcontract management to ensure effective use of appropriated resources -Execute Terminal High Altitude Area Defense program in compliance with internal and external direction, policies, and regulations to ensure effective use of appropriated resources -Provide technical and business support in the negotiation and award of the Battery contracts -Conduct Integrated Baseline Reviews to ensure prime contractor's baseline cost, schedule, and risk aligned with THAAD project office requirements 			
--	--	--	--

Variance Analysis: Increase from FY 2011 to FY 2012 caused by movement of scope from System Engineering, THAAD Fire Control and Communication, Launcher, and Interceptor to this budget activity. Increase from FY 2012 to FY 2013 includes scope to initiate THAAD Build 2.0 software and hardware and incorporation of the Integrated Master Test Plan.

FY 2014 Plans:

<ul style="list-style-type: none"> -Continue development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements -Conduct Terminal High Altitude Area Defense (THAAD) 2.0 Engineering Design Review to ensure Phase II debris mitigation design accounts for the results of FTO-01 (BMDS Operational Flight Test) -Conduct Models and Simulations (M&S) development to support element and Ballistic Missile Defense System (BMDS) events including all Integrated Master Test Plan (IMTP) M&S related activities to include System Pre Mission Tests (SPMTs) and System Post Flight Reconstruction (SPFRs) and conduct analysis of the Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data collected during test events to validate and accredit the M&S by the Operational Test Agency (OTA) -Initiate development of Launch on Link 16 BMD System Based Track capability to provide the ability to initiate launch and engagement of THAAD interceptors using sensor data provided by BMDS sources outside the THAAD Battery -Continue to design, develop, qualification test, and field annual release of Terminal High Altitude Area Defense (THAAD) system software to ensure continued performance and operation of fielded batteries -Continue to develop and maintain models, simulations, testbeds, and associated software required to perform engineering verification and analysis utilizing system simulations and Hardware-in-the-Loop (HWIL) facilities to ensure accurate element configuration and representation 			
--	--	--	--

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>-Continue integration and implementation of THAAD and its components in the BMDS through participation in Missile Defense Agency (MDA) Ground Test Campaigns and Performance Assessments to evaluate system performance and interoperability within the integrated BMDS</p> <p>-Continue integration and implementation of THAAD and its components in the BMDS through participation in Combatant Commander (COCOM) wargames and exercises</p> <p>-Implement Mandatory Information Assurance updates and perform Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded batteries</p> <p>-Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs and guidance</p> <p>-Provide prime contractor technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, and integration activities to ensure effective use of appropriated resources</p> <p>-Provide prime contractor program management, and subcontract management to ensure effective use of appropriated resources</p> <p>Variance Analysis: Decreases are a result of realigning portions of Build 2.0 and transfer of \$50.109 Million to the Program Operations (previously Program Management) accomplishment.</p>			
--	--	--	--

<p>Title: System Test</p> <p style="text-align: right;">Articles:</p> <p>Description: THAAD System Test included mission planning, pre-test integration, conduct of readiness reviews, test asset transportation, test execution and data collection, post test reporting, data distribution, sustainment and maintenance of test equipment and facilities, maintenance, repair, and fueling of THAAD Battery assets utilized in testing. System Test moves to project MT07 beginning in FY 2013.</p> <p>FY 2012 Accomplishments:</p> <p>-Supported Flight Test, Ground Test, Mission Planning, Performance Assessment, Systems Analysis, and Range Safety analysis in accordance with Integrated Master Test Plan</p> <p>-Continued flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and support of flight test operations at Reagan Test Site (RTS) for FTI-01 (Ballistic Missile Defense System (BMDS) Integration Flight Test)</p> <p>-Continued flight test planning, range interface, coordination with Operational Test Agencies (OTAs) at Reagan Test Site (RTS) for FTO-01 (BMDS Operational Flight Test) to further demonstrate in an operational scenario THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with C2BMC and forward-based AN/TPY-2</p> <p>-Supported planning and execution of BMDS interoperability exercises and overlays</p> <p>-Provided pre-mission planning, pre and post mission analysis, reporting support, and execution to BMDS Ground Test campaigns</p>	58.151 0	0.000 0	0.000 0
---	-------------	------------	------------

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Provided data management, facilities operations, and post-test analysis and reporting support in support of BMDS System Tests -Monitored targets design, development, delivery, and execution to support flight test program -Supported pre-flight testing in the System Integration Laboratory (SIL) Hardware-in-the-Loop (HWIL) facility -Conducted JITC and Army certification testing to support incremental release of System Software Support (SSS) builds for THAAD Fire Control & Communication (TFCC) -Collected and analyzed Critical Engagement Conditions (CEC) and Empirical Measurement Events (EME) data from flight testing -Provided onsite range support for THAAD component maintenance, repair and fueling <p>Variance Analysis: Decrease from PB 2013 to PB 2014 due to the elimination of FTT-13 and realigning FTO-01 to FY 2013.</p> <p>FY 2013 Plans: Plans for this scope are included in MT07 THAAD accomplishments/plans: System Test.</p> <p>FY 2014 Plans: Plans for this scope are included in MT07 THAAD accomplishments/plans: Flight Test, Infrastructure, and Ground Test.</p>				
Title: THAAD Program Support (previously Maintenance, Training, and Transportation)		36.704	51.040	32.315
		0	0	0
<p>Description: This activity provides maintenance and transportation for each THAAD component and to ensure that Government Furnished Equipment (GFE) is available when required. It develops and maintains the THAAD training devices and provides the contract vehicle necessary to conduct New Equipment Training prior to each THAAD Battery fielding. This activity develops the THAAD Objective Supportability Strategy, as well as, develops the Depot Maintenance Support Plan, Level of Repair Analysis, Core Logistics Assessment, Performance Based Logistics Planning, Core Depot Assessment/Source of Repair Analysis, Depot Maintenance Study, and the Demilitarization/Disposal Plan. This activity also includes the development of enhanced transportation capabilities for the missile round. The THAAD embedded Army Hybrid Cell is the staff and internal operating budget that performs and executes the scope of the Program Support Items activity; they are a separate staff from the Program Operations. It is composed of combined MDA and Army personnel providing Doctrine, Training, Leadership, Organization, Materiel, Soldier (DTLOMS) support for the THAAD system. The Hybrid Cell provides technical guidance, financial management, cost and schedule performance analysis, cost estimation and analysis, integration activities, and sub-contract management to ensure effective use of appropriated resources</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Provided supportability planning & analysis, training oversight, peculiar support equipment, transportation controls, deployment and sustainment support -Completed Collective Training for Battery #2 		Articles:		

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>		PROJECT MD07: <i>THAAD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>-Continued planning for THAAD New Equipment Training (NET) and Collective Training for Batteries 3 through 6</p> <p>-Continued planning for replacement training in support of fielded systems</p> <p>-Provided maintenance support on multiple hardware and software configurations of THAAD components</p> <p>-Continued maintenance, operations and transportation in support of THAAD development</p> <p>-Continued development of Institutional Conduct for Fire Trainer (ICOFT)</p> <p>-Continued in the design and development of Radar March Order & Emplacement Trainer (MOET)</p> <p>-Continued in the design and development of Table Top Trainer (TT3)</p> <p>-Continued support of Army requirement for additional training devices For Institutional Training Base (ITB) based on update to System Training Plan (STRAP)</p> <p>Variance Analysis: Decrease from PB 2013 to PB 2014 is a result of realigning portions of Build 2.0.</p> <p>FY 2013 Plans:</p> <p>-The THAAD embedded Army Hybrid Cell is composed of combined MDA and Army personnel providing Doctrine, Training, Leadership, Organization, Materiel, Soldier (DTLOMS) support for the THAAD system. The Hybrid Cell provides technical guidance, financial management, cost and schedule performance analysis, cost estimation and analysis, integration activities, and sub-contract management to ensure effective use of appropriated resources</p> <p>-Continue Launcher and Radar Embedded Training (ET) development to provide a capability to maintain soldier proficiency in the classroom and in fielded Batteries</p> <p>-Continue development for Institutional Conduct of Fire Trainer (ICOFT) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Continue development of Radar March Order & Emplacement Trainer (RMOET) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Complete production of Table Top Trainer (TT3)</p> <p>-Initiate spares procurement for Institutional Training Base (ITB) to maintain training devices</p> <p>-Refurbish one Launcher and one Launcher MOET for Institutional Training Base (ITB) to maintain Battery operational capability after soldier rotations</p> <p>-Complete the development of a System Level Interactive Electronic Technical Manual (IETM) for Battery Training to maintain warfighter proficiency</p> <p>Variance Analysis: Increase from FY 2011 to FY 2012 caused by creation of this budget activity to incorporate Integrated Logistic Support and Sustainment. Increase from FY 2012 to FY 2013 due to sustainment of a larger number of fielded assets.</p> <p>FY 2014 Plans:</p>				
				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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Complete development for Institutional Conduct of Fire Trainer (ICOFT) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Complete development of Radar March Order & Emplacement Trainer (RMOET) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Refurbish Launcher components for Institutional Training Base (ITB) to maintain Battery operational capability after soldier rotations</p> <p>-Develop Launcher and Radar Embedded Training (ET) to provide a capability to maintain soldier proficiency in the classroom and in fielded Batteries</p> <p>-Continue acquisition of spares for Institutional Training Base (ITB) to maintain training devices</p> <p>Variance Analysis: Decreases are a result of realigning funding to Operations and Maintenance, Defense Wide (0100D) for sustainment.</p>				
<p>Title: Program Operations (previously Program Management)</p> <p align="right">Articles:</p>		45.140	0.000	50.109
<p>Description: Program Operations provides for management of the Terminal High Altitude Area Defense (THAAD) program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the THAAD system and components.</p> <p>FY 2012 Accomplishments:</p> <p>-Provided technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, and integration activities to ensure effective use of appropriated resources</p> <p>-Ensured Terminal High Altitude Area Defense (THAAD) program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process</p> <p>-Provided technical and business support in the negotiation and award of the Battery contracts</p> <p>-Conducted Integrated Baseline Reviews to ensure prime contractor's baseline cost, schedule, and risk aligned with THAAD Project Office requirements</p> <p>-Conducted internal Baseline Execution Reviews to measure program progress against the six Missile Defense Agency approved baselines</p> <p>-Continued a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs</p>		0	0	0

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>		PROJECT MD07: <i>THAAD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Provided Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter.</p> <p>Variance Analysis: Increase due to realignment from THAAD Procurement to this task.</p> <p>FY 2013 Plans: FY 2013 activities are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test.</p> <p>FY 2014 Plans: -Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data -Ensure Terminal High Altitude Area Defense (THAAD) program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process -Conduct internal Baseline Execution Reviews to measure program progress against the six Missile Defense Agency approved baselines -Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs -Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter</p> <p>Variance Analysis: Increase is due to realignment of this task from THAAD Development (previously Weapon Sys Engr Integ & Test) to this task.</p>				
Title: Project Redwood- Details at a Higher Classification		21.839	7.396	4.122
	Articles:	0	0	0
Description: See Description Below				
FY 2012 Accomplishments: 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.				
FY 2013 Plans:				

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>		PROJECT MD07: <i>THAAD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
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. FY 2014 Plans: 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.				
Title: Modeling and Simulations		11.113	0.000	0.000
		Articles: 0	0	0
Description: THAAD supports Ballistic Missile Defense System (BMDS) Models and Simulations which provides end to end simulation to support flight test pre-mission and post mission analysis, system performance analysis, Ballistic Missile Defense Ground Test, and warfighter exercises. These efforts allow THAAD to participate in BMDS testing activities. Enhancements to models and simulations are included in THAAD Development beginning in FY 2013.				
FY 2012 Accomplishments: -Developed and delivered major releases of M&S digital products: Digital Simulation Architecture framework for use in Performance Assessment as part of the CD04 Operational Test, real-time venues including Warfighter Exercises, Warfighter Training, C2BMC software Spiral Testing for MDA's release of C2BMC v8.x development, and Ground Test campaign; Missile Defense Space Warning Tool (models validated space-borne assets of BMDS) for use in Performance Assessments and Warfighter Exercises, BMD International Simulation for use in International virtual BMD demonstrations, BMD education, and Warfighter wargames -Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting various uses: Performance Assessment Simulation (utilizing DSA, MDST, and Element-provided high-resolution models) to support full-envelope BMDS performance assessment for Performance Assessment events; Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign -Operated and maintained software of the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter Exercises -Provided software support for PATRIOT System Effectiveness Model (PSEM) for use in Performance Assessment events -Controlled and maintained Performance Assessment Simulation "ensembles" for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL				
FY 2013 Plans: FY 2013 activities are included in MD07 THAAD accomplishments/plans: Weapon System Engineering Integration & Test (WSEIT).				
FY 2014 Plans:				

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2014 activities are included in MD07 Terminal High Altitude Area Defense (THAAD) accomplishments/plans: THAAD Development (previously Weapon Sys Engr Integ & Test).			
Accomplishments/Planned Programs Subtotals	371.516	229.869	228.692

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>
• 0208866C: <i>O&M</i>	201.735	259.975	256.201		256.201	288.477	314.696	301.788	310.165	0.000	1,933.037
• MD07: <i>THAAD Procurement</i>	604.650	460.728	581.005		581.005	449.665	490.621	468.607	468.607	0.000	3,523.883

Remarks

D. Acquisition Strategy

The program is closing out contract line items in the basic THAAD Engineering, Manufacturing, and Development (EMD) contract that are associated with THAAD 1.0 while continuing THAAD 2.0 contract line items. THAAD awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for the continuation of THAAD 2.0 development. The discrete task orders allow management and tracking of Development work.

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

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
THAAD Development (previously Weapon Sys Engr Integ & Test) - Advanced Capability Development	SS/IDIQ	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	38.722		38.934	Nov 2012	52.268	Nov 2013	-		52.268	Continuing	Continuing	Continuing
THAAD Development (previously Weapon Sys Engr Integ & Test) - Lockheed Martin	SS/CPAF	LMSSC:Sunnyvale, CA/Huntsville, AL	221.124	140.598		48.985	Nov 2012	37.869	Nov 2013	-		37.869	Continuing	Continuing	Continuing
THAAD Development (previously Weapon Sys Engr Integ & Test) - MDA Program Support	MIPR	Missile Defense Agency (MDA):Ft. Belvoir, VA/ Huntsville, AL	12.223	5.302		61.473	Nov 2012	4.195	Nov 2013	-		4.195	Continuing	Continuing	Continuing
THAAD Development (previously Weapon Sys Engr Integ & Test) - Models & Simulations	MIPR	US Army Research, Development, Engineering Command (RDECOM):Huntsville, AL	63.056	13.947		22.041	Nov 2012	47.814	Nov 2013	-		47.814	Continuing	Continuing	Continuing
Subtotal			296.403	198.569		171.433		142.146		0.000		142.146			

Remarks
N/A

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
THAAD Program Support (previously Maintenance, Training, and Transportation) - Army Cell to Hybrid Program Office	MIPR	Integrated Material Management Center, AMCOM:Huntsville, AL	6.087	5.767		7.910	Nov 2012	0.000		-		0.000	0.000	19.764	0.000

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</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			
THAAD Program Support (previously Maintenance, Training, and Transportation) - MDA Program Support	Various	Missile Defense Agency (MDA):Huntsville, AL	0.000	8.249		7.899	Nov 2012	0.000		-		0.000	0.000	16.148	0.000
THAAD Program Support (previously Maintenance, Training, and Transportation) - Maintenance, Training, Transportation and Operations Support	Various	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	22.688		35.231	Nov 2012	32.315	Nov 2013	-		32.315	Continuing	Continuing	Continuing
Program Operations (previously Program Management) - Program Operations MDA Program Support	Various	Missile Defense Agency (MDA):Ft. Belvoir, VA/ Huntsville, AL	9.494	45.140		0.000		50.109	Oct 2013	-		50.109	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	N/A:N/A	31.445	21.839		7.396	Oct 2012	4.122	Oct 2013	-		4.122	Continuing	Continuing	Continuing
Modeling and Simulations - Teledyne Brown Eng	SS/CPAF	Teledyne Brown Engineering:Huntsville, AL	13.090	11.113		0.000		0.000		-		0.000	0.000	24.203	0.000
Subtotal			60.116	114.796		58.436		86.546		0.000		86.546			

Remarks

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>
---	--	--------------------------------------

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			
System Test - BMDS Ground Testing	MIPR	US Army AMRDEC:Huntsville, AL	0.000	11.638		0.000		0.000		-		0.000	0.000	11.638	0.000
System Test - Contract Support Services (CSS)	C/CPFF	Multiple to include Dynetics, L3, & TSI:Huntsville, AL	3.520	0.435		0.000		0.000		-		0.000	0.000	3.955	0.000
System Test - Flight Test Planning, Analysis, and Execution	Various	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	25.361		0.000		0.000		-		0.000	0.000	25.361	0.000
System Test - MDA Program Support	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	4.779	18.668		0.000		0.000		-		0.000	0.000	23.447	0.000
System Test - Other Government Agencies (OGA)	Various	Multiple to include WSMR, PMRF, ATEC, RDEC & SMDC:NM, HI, VA, & Huntsville, AL	33.930	2.049		0.000		0.000		-		0.000	0.000	35.979	0.000
Subtotal			42.229	58.151		0.000		0.000		0.000		0.000	0.000	100.380	0.000

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

	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	398.748	371.516	229.869	228.692	0.000	228.692			

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</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
--	-----------------	---------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</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
Battery #1 Interceptor Deliveries Complete	▲																											
Battery #2 Interceptor Deliveries Complete			▲																									
Build 2.0 Phase I Engineering Design Review (EDR)				▲																								
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)				▲																								
Advanced Capability Development Element Design Review (EDR)								△																				
Complete Institutional Conduct of Fire trainer (ICOFT)											△																	
Complete Institutional Training Devices												△																
Complete THAAD System Build 2.0 Phase II												△																
Build 2.1 Engineering Requirements Review (ERR)															△													
Build 2.1 Engineering Design Review (EDR)																△												
Complete THAAD System Build 2.1																				△								

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD07: <i>THAAD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Battery #1 Interceptor Deliveries Complete	1	2012	1	2012
Battery #2 Interceptor Deliveries Complete	3	2012	3	2012
Build 2.0 Phase I Engineering Design Review (EDR)	4	2012	4	2012
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)	1	2013	1	2013
Advanced Capability Development Element Design Review (EDR)	1	2014	1	2014
Complete Institutional Conduct of Fire trainer (ICOFT)	4	2014	4	2014
Complete Institutional Training Devices	2	2015	2	2015
Complete THAAD System Build 2.0 Phase II	3	2015	3	2015
Build 2.1 Engineering Requirements Review (ERR)	4	2015	4	2015
Build 2.1 Engineering Design Review (EDR)	3	2016	3	2016
Complete THAAD System Build 2.1	4	2017	4	2017

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MC07: <i>Cyber Operations</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
MC07: <i>Cyber Operations</i>	-	0.000	0.000	0.530	-	0.530	0.539	0.548	0.557	0.574	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 MC07 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD01 of this PE.

A. Mission Description and Budget Item Justification

Funding in this project sustains 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 Command and Control Battle Management and Communications (C2BMC) 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 THAAD certification to operate in the BMD System.

This project supports the monitoring and tracking of Cybersecurity 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	0.530
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans:			

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MC07: <i>Cyber Operations</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
N/A			
<i>FY 2014 Plans:</i> -Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems -Develop C2BMC DIACAP certification and accreditation packages -Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies -Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.530

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
• D1300639: <i>Fort Drum, New York, IDT Complex</i>	0.000	25.900	0.000		0.000	0.000	0.000	0.000	0.000	0.000	25.900
• D1400634: <i>Clear AFS, AK</i>	0.000	0.000	17.204		17.204	0.000	0.000	0.000	0.000	0.000	17.204

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MC07: <i>Cyber Operations</i>
---	--	---

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>
------------------	----------------	----------------	-------------------------------	------------------------------	--------------------------------	----------------	----------------	----------------	----------------	-----------------------------------	-------------------

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MC07: <i>Cyber Operations</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			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies: Various MDA Locations	0.000	0.000		0.000		0.530	Jul 2014	-		0.530	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.530		0.000		0.530			

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	0.530	0.000	0.530			

Remarks
N/A

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</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
MT07: <i>THAAD Test</i>	-	0.000	70.928	24.547	-	24.547	118.946	32.415	65.559	76.563	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

Beginning in FY 2013, THAAD System Test plans moved into Budget Project MT07, which is part of this Program Element 0603881C (Ballistic Missile Defense Terminal Defense Segment). Then in FY 2014 System Test plans are further broken out into Flight Test, Infrastructure, and Ground Test.

A. Mission Description and Budget Item Justification

Terminal High Altitude Area Defense (THAAD) System Test conducts Ballistic Missile Defense System (BMDS) Flight Tests and Ground Tests with other BMDS elements (including BMDS Command Control / Battle Management and Communication, PATRIOT, and Aegis) in accordance with BMDS Integrated Master Test Plan. THAAD System Test coordinates with Operational Test Agencies, conducts flight test operations, performs post-flight test reporting, and performs data distribution and data storage at Pacific Missile Range Facility and the Reagan Test Site.

THAAD Flight Testing includes mission planning, pre-flight integration testing, conduct of readiness reviews, test asset transportation, flight test execution and data collection, post flight test reporting and data distribution.

Infrastructure includes sustainment and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.

Ground Tests include mission planning, BMDS test integration, conduct of readiness reviews, ground test execution and data collection, and post test reporting and data distribution.

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

	FY 2012	FY 2013	FY 2014
Title: System Test	0.000	70.928	0.000
Articles:	0	0	0
Description: THAAD System Test includes mission planning, pre-test integration, conduct of readiness reviews, test asset transportation, test execution and data collection, post test reporting, data distribution, sustainment and maintenance of test equipment and facilities, maintenance, repair, and fueling of THAAD Battery assets utilized in testing.			
FY 2012 Accomplishments:			

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

Description: Infrastructure includes sustainment and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing. FY 2012 Accomplishments: Plans for this scope are included in MD07 THAAD accomplishments/plans: System Test. FY 2013 Plans: Plans for this scope are included in MT07 THAAD plans: System Test. FY 2014 Plans: -Provide data management, facilities operations, and post-test reporting in support of Ballistic Missile Defense System (BMDS) System Tests to ensure data collection and readiness for mission execution -Provide on-site range support for Terminal High Altitude Area Defense (THAAD) maintenance, repair, and fueling to ensure readiness of the THAAD test assets -Sustain and maintain THAAD Launch and Test Support Equipment (L&TSE) to ensure readiness of the THAAD test equipment			
--	--	--	--

Title: Ground Test Articles:	0.000 0	0.000 0	8.742 0
---	------------	------------	------------

Description: Ground Tests includes mission planning, BMDS test integration, conduct of readiness reviews, ground test execution and data collection, post test reporting and data distribution. FY 2012 Accomplishments: Plans for this scope are included in MD07 THAAD accomplishments/plans: System Test. FY 2013 Plans: Plans for this scope are included in MT07 THAAD plans: System Test. FY 2014 Plans: -Continue THAAD participation in Missile Defense Agency (MDA) Ground Test operational scenario events (GT-04 and GT-06 campaigns) to ensure THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with Command and Control, Battle Management, Communications (C2BMC) and forward-based Army Navy Transportable Radar Surveillance and Control (AN/TPY-2) -Continue Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)			
---	--	--	--

Accomplishments/Planned Programs Subtotals	0.000	70.928	24.547
---	-------	--------	--------

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
---	--	---

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

N/A

Remarks

D. Acquisition Strategy

The program is closing out contract line items in the basic THAAD Engineering, Manufacturing, and Development (EMD) contract that are associated with THAAD 1.0 while continuing THAAD 2.0 contract line items. THAAD awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for the continuation of THAAD 2.0 development. The discrete task orders allow management and tracking of Development work.

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</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			
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			
System Test - BMDS Ground Testing and Flight Test Support	MIPR	US Army AMRDEC:Huntsville, AL	0.000	0.000		19.313	Nov 2012	0.000		-		0.000	0.000	19.313	0.000
System Test - Flight Test Planning, Analysis, and Execution	Various	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	0.000		18.583	Nov 2012	0.000		-		0.000	0.000	18.583	0.000
System Test - Flight Test Range Infrastructure/ Execution	MIPR	Reagan Test Site:Kwajalein Atoll	0.000	0.000		12.604	Nov 2012	0.000		-		0.000	0.000	12.604	0.000
System Test - Flight Test Support and Planning	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	0.000	0.000		20.428	Nov 2012	0.000		-		0.000	0.000	20.428	0.000
Flight Test - Planning, Analysis, and Execution	Various	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	0.000		0.000		0.000		-		0.000	Continuing	Continuing	Continuing

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
---	--	---

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			
Flight Test - Support and Planning	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	0.000	0.000		0.000		4.110	Nov 2013	-		4.110	Continuing	Continuing	Continuing
Infrastructure - Range Infrastructure	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	0.000	0.000		0.000		9.244	Nov 2013	-		9.244	Continuing	Continuing	Continuing
Infrastructure - Range Infrastructure Prime	Various	LMSSC:Sunnyvale, CA/Huntsville, AL	0.000	0.000		0.000		2.451	Nov 2013	-		2.451	Continuing	Continuing	Continuing
Ground Test - BMDS Ground Test Support	MIPR	US Army AMRDEC:Huntsville, AL	0.000	0.000		0.000		5.134	Nov 2013	-		5.134	Continuing	Continuing	Continuing
Ground Test - Support and Planning	Various	MDA:Ft. Belvoir, VA/ Huntsville, AL	0.000	0.000		0.000		3.608		-		3.608	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		70.928		24.547		0.000		24.547			

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

	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	70.928	24.547	0.000		24.547	

Remarks

N/A

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>
---	--	---

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

	FY 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
Conduct FTO-01 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)							△																					
Fast Event 1											△																	
Fast Event 2											△																	
Conduct FTT-11a (THAAD Intercept Flight Test)															△													
Conduct FTO-2 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)																△												
Conduct FTT-15 (THAAD Intercept Flight Test)																							△					
Conduct FTO-03 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)																												△

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MT07: <i>THAAD Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct FTO-01 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	3	2013	3	2013
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
Conduct FTT-11a (THAAD Intercept Flight Test)	3	2015	3	2015
Conduct FTO-2 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	4	2015	4	2015
Conduct FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
Conduct FTO-03 (GMD/Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</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
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	34.720	1.156	1.145	1.091	-	1.091	1.108	1.219	1.240	1.257	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

PATRIOT (Phased Array Tracking Radar Intercept Of Target) Advanced Capability (PAC-3) is one of the most mature elements of the Ballistic Missile Defense System (BMDS) and is now operational with the U.S. Army. It is a land-based element built upon the proven PATRIOT air and missile defense infrastructure.

The Army is responsible for production and further development of Advanced Capability-3 System; the Missile Defense Agency remains responsible for the Ballistic Missile Defense System interoperability and integration efforts. Lower Tier Project Office (LTPO) will utilize MDA funds to further the integration of PATRIOT into the BMDS. Support includes software coding, performance testing, flight testing and integration activities and modifications to cope with evolving threats.

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

	FY 2012	FY 2013	FY 2014
Title: General Support	1.156	1.145	1.091
Articles:	0	0	0
Description: PATRIOT Advanced Capability (PAC-3) is a U.S. Army short range BMDS that interfaces with the BMDS. MDA funds PATRIOT participation in BMDS interoperability integration efforts.			
FY 2012 Accomplishments:			
-Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by Missile Defense Agency (MDA) based on the Transfer and Transition Plan Annex L.			
FY 2013 Plans:			
-Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by Missile Defense Agency (MDA) based on the Transfer and Transition Plan Annex L.			
FY 2014 Plans:			

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by Missile Defense Agency (MDA) based on the Transfer and Transition Plan Annex L.			
Accomplishments/Planned Programs Subtotals	1.156	1.145	1.091

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

N/A

Remarks

D. Acquisition Strategy

The planned acquisition strategy for PATRIOT (Phased Array Tracking Radar Intercept on Target) support awards Task Orders on multiple contract vehicles and memorandum of Agreements with other government agencies. The program is considering opportunities for potential competitive awards.

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</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			
General Support - Evolutionary Development Program (EDP) Task 2	SS/FFP	Multiple:Multiple	32.360	0.000		0.000		0.000		-		0.000	32.360	64.720	32.360
Subtotal			32.360	0.000		0.000		0.000		0.000		0.000	32.360	64.720	32.360

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			
General Support - General Support	C/FFP	ITT/CAS:Huntsville, AL	2.360	1.156		1.145	Jan 2013	1.091	Jan 2014	-		1.091	Continuing	Continuing	Continuing
Subtotal			2.360	1.156		1.145		1.091		0.000		1.091			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	PROJECT MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>
---	--	--

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	34.720	1.156	1.145	1.091	0.000	1.091			

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-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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</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>	-	8.369	14.987	14.130	-	14.130	15.073	11.687	14.829	14.188	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	8.369	14.987	14.130
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	8.369	14.987	14.130

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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</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 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</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		1.258	Mar 2013	1.125	Mar 2014	-		1.125	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various:Multi: AL, VA, Aust, Japan	0.000	0.000		1.278	Oct 2012	1.499	Oct 2013	-		1.499	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AL, VA	0.000	8.369		11.881	Jan 2013	11.206	Jan 2014	-		11.206	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various:Multi: AL, VA	0.000	0.000		0.570	Oct 2012	0.300	Oct 2013	-		0.300	Continuing	Continuing	Continuing
Subtotal			0.000	8.369		14.987		14.130		0.000		14.130			

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	8.369	14.987	14.130	0.000	14.130			

Remarks

N/A

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</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	2,978.219	1,143.313	903.172	1,033.903	-	1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
MD08: <i>Ground Based Midcourse</i>	2,978.219	1,095.755	569.622	739.423	-	739.423	745.957	724.329	531.841	484.155	Continuing	Continuing
MC08: <i>Cyber Operations</i>	-	0.000	0.000	2.124	-	2.124	2.126	2.129	2.132	2.135	Continuing	Continuing
MT08: <i>Ground Based Midcourse Test</i>	-	0.000	80.381	98.895	-	98.895	98.074	73.442	74.986	87.036	Continuing	Continuing
MX08: <i>Ground Based Midcourse Development Support</i>	-	0.000	207.133	142.856	-	142.856	152.208	155.397	163.185	170.067	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	47.558	46.036	50.605	-	50.605	47.135	47.271	43.054	38.431	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 Ground-based Midcourse Defense (GMD) program is the element of the Ballistic Missile Defense System (BMDS) that provides combatant commanders with a continuously available (24 hours a day, 7 days a week, 365 days a year) capability to defend the Homeland against limited Intercontinental Ballistic Missile (ICBM) attacks. The GMD capability consists of Ground Based Interceptors (GBI), GMD Fire Control system (GFC), GMD Communications Network (GCN), In-Flight Interceptor Communications System Data Terminals (IDT) and all of the ground Launch Support Systems (LSS) (silos, silo interface vaults (SIVs), environmental control systems, command launch equipment (CLE), firing circuits and safety systems). The 30 operationally deployed GBIs located at Fort Greely, Alaska (26 GBIs) and Vandenberg Air Force Base, California (4 GBIs) each deliver a single Exoatmospheric Kill Vehicle (EKV) to defeat threat warheads in space during the midcourse phase of the ballistic trajectory. The GMD Fire Control System consists of fire control nodes in Fort Greely, Alaska and Missile Defense Integration and Operations Center (MDIOC) Colorado Springs, Colorado. IDTs are currently located in Fort Greely, Alaska, Vandenberg Air Force Base, California, Eareckson Air Station, Alaska, and the Missile Defense Agency (MDA) plans to deliver an additional IDT to Fort Drum, New York. The GMD capability leverages integration of Ballistic Missile Defense System sensors in Japan, Alaska, California, United Kingdom, Greenland, and Turkey. Development objectives for GMD include: testing and validating the performance of the Capability Enhancement I and II (CE-I and CE-II) GBIs, development and testing of capability upgrades, manufacturing additional GBIs in support of operational requirements, flight testing, upgrading fielded GBIs, and conducting a comprehensive component ground testing and upgrades program that will improve GBI reliability and minimize the number of GBIs required to destroy each ICBM threat.

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>
---	---

In response to FTG-06a failed intercept, the program continues to develop and qualify a modified Inertial Measurement Unit, Firmware, and Cradle Isolation to improve the Exoatmospheric Kill Vehicle's (EKV) performance in flight. Critical to the program's success is the Systems Engineering and Test activities associated with the design modification and component testing leading up to a fully Certified IMU Design. To reduce the concurrency risk to the GMD program's ability to execute the test program and deliver the remaining CE-II GBIs, the Agency has instituted a more rigorous and systematic approach to proving out the FTG-06a failure mitigations. Included in the new program is a robust design process, additional qualification tests and design verification tests, and a final certification review of all data thus ensuring the mitigations fully address the FTG-06a root cause failure. To further reduce the concurrency risk to the GMD program, the Agency has established manufacturing gates for the IMU, the EKVs, and the eventual emplacements of the CE-II GBI's. These manufacturing gates are anchored to knowledge based decisions and events included in the new more robust design and qualification process. This new approach to reduce design/manufacturing concurrency and ensure manufacturing activities are not proceeding until sufficient engineering data indicates a readiness to proceed will significantly contribute to the program's ability to successfully establish interceptor testing and delivery baselines.

Cyber Operations sustains 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 Plans of Action and Milestones (POA&Ms) for MDA Ground-based Midcourse Defense (GMD) mission 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	1,159.456	903.172	914.603	-	914.603
Current President's Budget	1,143.313	903.172	1,033.903	-	1,033.903
Total Adjustments	-16.143	0.000	119.300	-	119.300
• 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	-0.279	0.000			
• SBIR/STTR Transfer	-15.863	0.000			
• Other Adjustment	-0.001	0.000	119.300	-	119.300

Change Summary Explanation

FY 2014 funding was adjusted to: 1) Initiate the refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska; 2) fully fund Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK UEWB and Ft. Drum, NY IDT assets, support SBIRS interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes, 3) Initiate the Ground Systems Technology Refresh effort which provides upgrades to the Ground Systems components by reducing life cycle costs and

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 0603882C: *Ballistic Missile Defense Midcourse Defense Segment*

ensuring sustainability, and 4) Initiate the Ground Systems suite 6B4 to provide Feature Aided Track Correlation and Feature Aided Target Object Mapping, and incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes.

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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
MD08: <i>Ground Based Midcourse</i>	2,978.219	1,095.755	569.622	739.423	-	739.423	745.957	724.329	531.841	484.155	Continuing	Continuing
Quantity of RDT&E Articles		5	5	1		1	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 Ground-based Midcourse Defense (GMD) program is described as follows:

The focus of the GMD program is to enhance the reliability of Ground Based Interceptors (GBIs) and sensor architecture to ensure the most effective architecture to support the maximum probability of successful intercepts against first generation Intercontinental Ballistic Missiles (ICBMs) - greatest protection at lowest cost.

GMD plans to confirm and improve the reliability of GBIs by instituting the GBI Reliability Growth Testing Program and the Component Reliability Program by conducting flight and ground tests, analyzing performance trends, and identifying reliability improvements for GBI component hardware. Testing of deployed GBIs will demonstrate current reliability while companion efforts on assemblies and components ensure that ongoing fleet upgrades to eliminate known risks are effective.

Missile Defense Agency (MDA) will continue to provide for the operations, training, and sustainment of GMD fielded capability at Fort Greely, Alaska; Eareckson Air Station, Alaska; Vandenberg Air Force Base, California; the Missile Defense Integration Operations Center (MDIOC), Colorado and across the nation-wide GMD Communications Network.

In FY 2011, a Failure Review Board (FRB) determined the cause of unsuccessful intercept of Flight Test Ground-based Midcourse Defense-06a (FTG-06a). GMD is incorporating the Agency's direction to reduce concurrency risk in the RTI Systems Engineering and Test activities by changing the FY 2013 - FY 2014 test program to include three intercept test missions and establish a spiral manufacturing approach to deliver the remaining CE-II GBIs. GMD is executing a Return To Intercept (RTI) program that addresses the root cause; develops modified designs; confirms a solution to the issue through intensive ground testing; conducts non-intercept flight tests, Controlled Test Vehicle (CTV-01 and CTV-02); and an intercept test mission, Flight Test Ground-based Midcourse Defense-09 (FTG-09). The Changes to the GMD flight test schedule may be necessary pending final analysis of the CTV-01 test.

GMD continues to build sub-assemblies that are not affected by FTG-06a root cause failure for the Interceptors (GBI) (GBIs 34-44) and deliver the Flight Test Interceptors required to support the RTI program. Once the corrective action is verified through ground and flight testing, operational interceptor deliveries will resume

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

(GBIs 45-47 have been utilized in previous GMD flight tests). GMD will continue long lead development and manufacturing for GBIs 48-58 in support of operational requirements incorporating Failure Review Board (FRB) resolutions, flight testing, and the Reliability Growth Program.

GMD continues building upon the Initial Homeland Defense that provides the fundamental capability against intermediate and long-range Ballistic Missiles threats. Work scope includes: 1) Conduct a CE-I intercept test, Flight Test Ground-based Midcourse Defense-07 (FTG-07); 2) Interceptors (GBIs 34-44); 3) Ground Systems 6B1.5 suite delivery to integrate an additional forward based Army/Navy Transportable Radar Surveillance-2 (AN/TPY-2) radar using the Ballistic Missile Defense System Command, Control, Battle Management, and Communications (C2BMC) System; 4) Ground Systems 6B2 suite delivery to provide expanded C2BMC essential elements of information for situational awareness, dynamic positioning capability for the In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) on the Sea Based X-Band Radar (SBX) platform, SBX version 3 interoperability, Warfighter requested changes, which enables the use of data provided by up to 14 AN-TPY-2 radars; 5) Ground Based Interceptor Exoatmospheric Kill Vehicle (EKV) software version 9 Capability Enhancement II (CE- II) and version 22 Capability Enhancement I (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 6) Fort Greely Power Plant, Missile Field-2, and 2nd GMD Fire Control Node delivery to provide the Warfighter with continuous dual-node operations; 7) Flight Test the weapon system against an Intermediate Range Ballistic Missile (IRBM) target with associated objects; 8) Ground Test the weapon system as a part of Ground Test - 04 (GT-04) campaign to assess Ballistic Missile Defense System (BMDS) capabilities.

Ground-based Midcourse Defense (GMD) also continues to develop an Enhanced Homeland Defense capability against intermediate and long-range Ballistic Missiles threats. Work scope includes: 1) Interceptors (GBIs 48-58); 2) Missile Field 1 at Fort Greely, Alaska refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening; 3) Ground Systems 6B3 suite delivery to use Near Term Discrimination (NTD) data, integrate the Clear, AK and Cape Cod, MA Upgrade to Early Warning Radar (UEWR) and Ft. Drum, NY In-Flight Interceptor Communications System (IFICS) Data Terminals (IDT) assets, support Space-Based Infrared System (SBIRS) interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes; 4) Ground Based Interceptor Exoatmospheric Kill Vehicle (EKV) software version 10 Capability Enhancement II (CE-II) and version 23 Capability Enhancement I (CE-I) to incorporate in-flight performance improvements and support to the flight test program; 5) Fort Drum, NY IDT delivery to increase system performance in specific engagement scenarios; 6) Flight Test the weapon system against targets with increasing complexity and in a salvo launch sequence; 7) Demonstrate the ability to integrate future BMDS sensor improvements; and 8) Ground Test the weapon system as a part of Ground Test - 06 (GT-06) campaign to assess BMDS capabilities.

In response to the new projected threat to the homeland, the FY 2014 President's Budget Request contains \$53M in RDTE and \$82M in MILCON to initiate Missile Field - 1 refurbishment. This project will include demolishing and building a hardened Mechanical Electrical Building, installation of utility lines and ventilation systems, obsolescence upgrades to mission critical equipment, and acceptance/functional testing. Once completed in 2016, MF-1 will be a 6 silo High Altitude Electromagnetic Pulse (HEMP) hardened Missile Field. Additionally, the MDA will direct 6 GBIs be emplaced starting in FY 2016 achieving a full 44 GBI capability in FY 2017.

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

	FY 2012	FY 2013	FY 2014
Title: Ground Based Interceptor	549.751	295.242	408.844
Articles:	5	5	1
Description: Ground-based Midcourse Defense (GMD) delayed delivery of Capability Enhancement II (CE-II) Ground Based Interceptors (GBIs 34-44) due to the Flight Test Ground-based Midcourse Defense-06a (FTG-06a) test failure. However, GMD			

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>continued to build sub-assemblies that are not affected by FTG-06a root cause failure for the Ground Based Interceptors (GBIs 34-44), and deliver the Flight Test Interceptors required to support the Return to Intercept (RTI) program. The GBI program supports defense of the Homeland by manufacturing both flight test and operational interceptors (GBIs 34-44) to both demonstrate interceptor performance as part of the Return to Intercept (RTI) program, and then to replace older fielded configuration GBIs to ensure a total of 30 operational assets are available to the Warfighter. To aid in the accomplishment of this mission, the GBI program provides developmental assets through conversion of older fielded GBIs to Flight Test configuration to support the Integrated Master Test Plan (IMTP). Available GBI components are being used in the collection of reliability and aging data as part of the Component Reliability Program. With the award of the Deployment and Sustainment Contract (DSC) in December 2011, acquisition of five Ground Based Interceptors 48-52 were initiated in FY 2012 with plans for FY 2013 acquisition of six additional Ground Based Interceptors (GBIs 53-58) to support the operations and testing. (Note: Addition of 1 GBI (58) for testing of Capability Enhancement-II (CE-II) Block I GBI per Integrated Master Test Plan (IMTP))</p> <p><i>FY 2012 Accomplishments:</i></p> <ul style="list-style-type: none"> -Continued GBI Fleet Upgrade program to enhance reliability of the fielded GMD system and to support the Component Reliability Program (CRP) by providing hardware for data collection events, such as Aging & Surveillance testing -Continued acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing -Continued the repurposing of two operational Ground Based Interceptors (GBIs) to support GMD Return-to-Intercept (RTI) program -Continued the repurposing of one operational GBI as a backup to support GMD RTI program -Continued flight test rotation program of fielded GBIs to support the IMTP requirements and the Component Reliability Program -Continued RTI component lab testing (failure resolution testing and risk reduction testing): continued Test E (Chamber Hot Fire) test series -Continued RTI Exoatmospheric Kill Vehicle (EKV) software mitigation / redesign efforts and Inertial Measurement Unit (IMU) firmware resolution / validation -Initiated Upgrade Kit and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs to support flight test rotations of older GBIs as part of the program plan to sustain the GBI to FY 2032 and beyond -Completed purchase of booster and EKV components including motor sets for five Interceptors (GBIs 48-52), mitigating manufacturing restart costs of the select group of warm GBI 3rd and 4th tier suppliers -Initiated acquisition of 5 Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases -Continued GBI Component Reliability Program (CRP) which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements 			
---	--	--	--

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MD08: <i>Ground Based Midcourse</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Continued Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACs) Alternate Thruster design</p> <p>FY 2013 Plans:</p> <p>-Continue acquisition of Interceptors (GBIs 34-44) (subject to FTG-06a Failure Review Board (FRB) findings and resolution) to support both operations and testing</p> <p>-Complete the repurposing of one operational GBI to support Ground-based Midcourse Defense (GMD) Return to Intercept (RTI) series: FTG-06b Backup</p> <p>-Continue incorporation of RTI resolution findings into GBI fleet</p> <p>-Continue GBI Software Builds and Sustainment to support operational and flight test objectives</p> <p>-Continue GBI Stockpile Reliability Program (SRP) which includes testing of available GBI components to collect reliability and aging data and assessment of operational fleet upgrade requirements</p> <p>-Continue acquisition of five Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases</p> <p>-Continue EKV Divert and Attitude Control System (DACs) Alternate Thruster design</p> <p>-Initiate acquisition of five additional Interceptors (GBIs 53-57) to support enhanced GMD testing</p> <p>FY 2014 Plans:</p> <p>-Continue Ground Based Interceptors (GBI) Fleet Upgrade program to include fielded Capability Enhancement II (CE-II) GBIs</p> <p>-Continue acquisition of remaining CE-II (Legacy) Ground Based Interceptors (GBIs 34-44) Should MDA eliminate CTV-02 in FY14 and instead proceed to the CE-II intercept flight test (FTG-06b) in 1st quarter FY 2014, after the successful intercept test, the remaining CE-II GBIs will begin delivering for operational emplacements.</p> <p>-Continue acquisition of CE-II (upgraded boosters with Block I CE-II EKV) Ground Based Interceptors (GBIs 48-58) to support both operations and testing, including a new flight test to demonstrate the capability of the CE-II Block 1 GBIs</p> <p>-Continue GBI Software Builds and Sustainment to support operational and flight test objectives</p> <p>-Complete the Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACs) Alternate Thruster design qualification to increase GBI reliability</p> <p>-Continue flight test rotation program of fielded GBIs to support the Integrated Master Test Plan (IMTP) requirements and the Component Reliability Program</p> <p>-Continue Upgrade Kit and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs</p> <p>-Continue the GBI Reliability Growth Testing Program and the Component Reliability Programs to eliminate known risks and identify reliability improvements for GBI component hardware</p> <p>-Continue to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System</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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MD08: <i>Ground Based Midcourse</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Increase due to additional funding required in FY 2014 for the development and manufacturing of GBIs 48-58, alternate thruster design program and a more robust GBI component reliability testing program.				
Title: Systems Engineering and Program Management		106.219	85.466	133.557
		Articles: 0	0	0
<p>Description: Ground-based Midcourse Defense (GMD) Systems Engineering provides essential services for the development and fielding of the GMD hardware and software. Included in this effort are concept definition, requirements and interfaces, system design, integration, test planning and verification efforts. Key products are development and maintenance of the technical baseline and critical engineering processes for implementation and delivery of an integrated GMD element capability.</p> <p>Program Management provides for prime contractor management of the GMD program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Continued requirements development, engineering analysis, capability integration, and performance verification for GMD development and Ballistic Missile Defense System (BMDS) integration, including GMD compliance with the BMD System Specification, BMD System Description Document, and Master Integration Plan (MIP) -Continued Technical Performance Measurement (TPM) program to assess the current GMD capabilities against the evolving BMDS threat -Continued modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments -Continued modeling and simulation verification and validation to establish high confidence in Warfighter assessments -Initiated the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results. -Supported Component Requirements Reviews and Preliminary Design Reviews (PDR) for the GMD contribution to the BMDS Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and Ground Based Interceptor (GBI) hardware (e.g., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability -Continued design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter -Utilized Exoatmospheric Kill Vehicle (EKV) Hardware-In-The-Loop (HWIL) 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing (PMT) and Post Flight Reconstruction (PFR) in support of Return to Intercept (RTI) program 				

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Conducted EKV Capability Enhancement II (CE-II) performance and flight environment analysis to assess EKV mitigations</p> <p>FY 2013 Plans:</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration, including GMD compliance with the BMDS Specification, BMDS Description Document, and Master Integration Plan (MIP)</p> <p>-Continue Technical Performance Measurement (TPM) program to assess the current Ground-based Midcourse Defense (GMD) capabilities against the evolving BMDS threat</p> <p>-Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments</p> <p>-Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments</p> <p>-Support Component Requirements Reviews and Preliminary Design Reviews (PDR) for the GMD contribution to the Ballistic Missile Defense System (BMDS) Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and Ground Based Interceptor (GBI) hardware (e.g., Fleet Avionics Upgrade / Obsolescence Program) and software capabilities development to ensure delivery of a successful capability</p> <p>-Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter</p> <p>-Utilize Exoatmospheric Kill Vehicle (EKV) Hardware-In-The-Loop (HWIL) 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in accordance with the Integrated Master Test Plan (IMTP) to reduce execution risks from additional data and gaining confidence that capabilities performed as expected</p> <p>FY 2014 Plans:</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration</p> <p>-Continue Technical Performance Measurement (TPM) program to assess the current GMD capabilities against the evolving BMDS threat</p> <p>-Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments and Performance Assessments</p> <p>-Continue the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results, and initiate the code integration into a single BMDS framework to facilitate the interoperability between BMDS elements</p> <p>-Continue modeling and simulation verification and validation to establish high confidence in Warfighter assessments</p> <p>-Continue the development of modeling and simulation wrapped tactical code to reduce the life cycle cost and increase the fidelity of the results, and initiated the code integration into a single BMDS framework to facilitate the interoperability between BMDS elements.</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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>-Support Component Requirements Reviews and PDR for the GMD contribution to the BMDS Enhanced Homeland Defense including the Ground System Fire Control and Communications software development and GBI hardware (e.g., CE-II Block 1) and software capabilities development to ensure delivery of a successful capability</p> <p>-Continue design, planning, pre- and post-flight test analysis for current and future flight and ground tests to assess system performance and implement a rigorous test plan for verifying successful operation of capabilities delivered to the Warfighter</p> <p>-Utilize EKV HWIL 10-foot vacuum space chamber (10V Chamber) for Pre-Mission Testing and Post Flight Reconstruction in accordance with the Integrated Master Test Plan (IMTP) to reduce execution risks from additional data and gaining confidence that capabilities performed as expected</p> <p>-Continue providing support to the GBI Reliability Growth Testing Program and the Component Reliability Program to eliminate known risks and identify reliability improvements for GBI component hardware</p> <p>-Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight to ensure program meets all cost, schedule, and performance requirements</p> <p>Increase due to the addition of all contractor Systems Engineering and Program Management which was previously carried under other Midcourse accomplishments (GBI, GS, etc.). This change is consistent with contractor cost data reporting on the new Development and Sustainment Contract.</p>			
---	--	--	--

Title: Program Operations	119.215	118.939	80.491
Articles:	0	0	0

Description: Program Operations provides for government management of the Ground-based Midcourse Defense (GMD) program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality / safety / mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the GMD system and components.

FY 2012 Accomplishments:

- Provided technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities
- Provided contractor program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight
- Ensured GMD program compliance with internal and external direction, policies, and regulations
- Conducted Internal Baseline Reviews that align with the six Missile Defense Agency (MDA) approved baselines
- Continued a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MD08: <i>Ground Based Midcourse</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Provided Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter</p> <p>FY 2013 Plans:</p> <p>-Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data</p> <p>-Provide contractor program management, subcontract management, quality assurance, verification of hardware and software development, and test oversight to identify variances and initiate corrective actions to mitigate cost, schedule, or performance impacts</p> <p>-Ensure GMD program compliance with internal and external direction, policies, and regulations to deliver capability critical within a consistent and disciplined process</p> <p>-Conduct internal Baseline Execution Reviews (BER) to measure program progress against the six MDA approved baselines</p> <p>-Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs</p> <p>-Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter</p> <p>FY 2014 Plans:</p> <p>-Provide technical and business management support activities, financial management, cost and schedule performance analysis, cost estimation and analysis, configuration management and integration activities, to provide the Program Director with critical program status and decision quality data</p> <p>-Ensure Ground-based Midcourse Defense (GMD) program compliance with internal and external direction, policies, and regulations to deliver critical capability within a consistent and disciplined process</p> <p>-Conduct internal Baseline Execution Reviews (BER) to measure program progress against the six Missile Defense Agency (MDA) approved baselines</p> <p>-Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, and Safety in all phases of the system life cycle, throughout the supply chain, and at all levels of assembly emphasizing high yield rates which minimize test and rework costs</p> <p>-Provide Quality Safety and Mission Assurance (QSMA) operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered to the Warfighter</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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MD08: <i>Ground Based Midcourse</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Decrease due to the movement of Prime contract program management costs to the Systems Engineering and Program Management (SE/PM) accomplishment in FY 2014.				
Title: Ground Systems		100.291	69.975	116.531
		0	0	0
Articles:				
Description: The Ground-based Midcourse Defense (GMD) Ground Systems enable control and operation of the GMD Element as part of the Ballistic Missile Defense System (BMDS). Ground Systems consists of the GMD Fire Control, External Systems Interface (ESI), GMD Communications Network, In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT), Launch Site Components (LSC) (silos, silo interface vaults (SIVs)), and Launch Support Systems (LSS) (Command Launch Equipment (CLE) and Launch Support Equipment (LSE).				
FY 2012 Accomplishments: -Initiated Ground Systems suite 6B3 to utilize Near Term Discrimination (NTD) data, integrate Ft. Drum, NY IDT assets, support Space-Based Infrared System (SBIRS) interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Delivered the new fourteen silo Missile Field-2 (MF-2) and Missile Field-2 Mechanical Electrical Building (MEB) to provide the Warfighter with a reliable and hardened Missile Field capability at Fort Greely, Alaska -Delivered the second Fire Direction Center (FDC) Node at Fort Greely, Alaska to provide the Warfighter with continuous dual-node operations -Initiated preliminary design in preparation for construction of an In Flight Interceptor Communications System (IFICS) Data Terminal (IDT) for Ft Drum, NY increased defensive capability against emerging threats -Initiated design efforts for storage state of Missile Field-1 (MF-1) once MF-2 is complete and operational -Completed the testing of the Fort Greely Power Plant and reached interim operational status				
FY 2013 Plans: -Continue Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK UEWR and Ft. Drum, NY IDT assets, support Space-Based Infrared System interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes -Complete the preliminary design and initiate construction efforts for an In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) at Fort Drum that will increase system performance in specific engagement scenarios -Continue storage state efforts for the Fort Greely, AK Missile Field-1 (MF-1)				
FY 2014 Plans:				

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Deliver Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK and Cape Cod, MA UEUR and Ft. Drum, NY IDT assets, support SBIRS interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes</p> <p>-Continue development and integration efforts for an In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT) at Fort Drum, NY that will increase system performance in specific engagement scenarios</p> <p>-Initiate the Ground Systems Technology Refresh effort which provides upgrades to the Ground Systems components by reducing life cycle costs and ensuring sustainability.</p> <p>-Initiate the Ground Systems suite 6B4 to provide Feature Aided Track Correlation and Feature Aided Target Object Mapping, and incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes</p> <p>-Initiate the refurbishment, upgrade and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska</p> <p>Decrease due to Development and Sustainment Contract (DSC) efficiencies in software builds and Fort Drum development / integration.</p>				
<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: Ground-based Midcourse Defense (GMD) executes an enhanced test program that includes expanding our flight and ground test programs to demonstrate our Initial Homeland Defense and Enhanced Homeland Defense capabilities against long-range threats. The GMD elements of the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) are intended to demonstrate the integrated missile defense capabilities under development and ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable.</p> <p>FY 2012 Accomplishments:</p> <p>-Continued to support execution of Ballistic Missile Defense System (BMDS) Ground Test-04 (GT-04) test campaign to assess BMDS capabilities with integration of additional BMDS sensors</p> <p>-Provided test infrastructure and coordination of flight test range support from Vandenberg Air Force Base for all range activities, engineering, operators and GBI transportation</p> <p>-Provided Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the Ground Based Midcourse Defense system from Colorado Springs, CO</p> <p>-Supported pre and post-flight test mission communications to include fulfillment of Government Furnished Equipment/ Government Furnished Services requirements and data analysis</p>		66.778 0	0.000 0	0.000 0

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

-Provided System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs

-Supported risk reduction testing through the use of the Prime Consolidated Integration Lab (PCIL) designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment

-Continued to support the Flight Test Ground Based Interceptor-06a (FTG-06a) failure response, which includes the conduct of a non-intercept test, Controlled Test Vehicle (CTV-01), to verify FTG-06a corrective actions. The test will be a 3-stage Capability Enhancement II (CE-II) non-intercept test of the Exoatmospheric Kill Vehicle (EKV), using a GBI launched from Vandenberg Air Force Base, California. There is no target planned for this test

-Continued to support the planning for Flight Test Ground-Based Midcourse Defense-09 (FTG-09), a 3-stage intercept engagement, using a Ground Based Interceptor (GBI) launched from Vandenberg Air Force Base against a target launched from Reagan Test Site (RTS)

-Demonstrated Ground Based Midcourse Defense Fire Control (GFC) 6B2 capabilities during Ground Test GTX-04e. This test integrated the GFC with updated software versions of the Sea Based X-Band Radar (SBX 3.1), Aegis Ballistic Defense (Aegis BMD 4.0.1), and the Army Navy/Transportable Radar Surveillance Model-2 (AN/TPY-2) Forward Based Mode (FBM CX-1)

FY 2013 Plans:
Starting in FY 2013, the BMDS Level Testing accomplishment will move from Project MD08 into Project MT08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment.

FY 2014 Plans:
N/A

Title: Sustainment	153.501	0.000	0.000
Articles:	0	0	0

Description: The Operations and Sustainment (O&S) mission provides for the operations, maintenance, repair, training, and sustaining engineering of the Ground-based Midcourse Defense (GMD) System. In addition to the above, O&S provides base operations support for GMD facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska and Eareckson Air Station, Alaska.

FY 2012 Accomplishments:

-Continued to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all Ground-based Midcourse Defense (GMD) sites

-Continued to support Base Operations at all GMD Sites in accordance with host installation support agreements

-Continued utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Continued on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products -Continued to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System -Continued to perform failure analysis and resolve systemic issues to reduce sustainment costs -Continued to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program -Continued to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system -Continued to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes FY 2013 Plans: Starting in FY 2013, the Sustainment accomplishment will move from Project MD08 into Project MX08, which is part of this PE: 0603882C: Ballistic Missile Defense Mid-Course Segment. FY 2014 Plans: N/A			
Accomplishments/Planned Programs Subtotals	1,095.755	569.622	739.423

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>
• 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
• 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
• 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

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>

D. Acquisition Strategy

The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities.

GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program.

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

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
Ground Based Interceptor - Alternate Thruster Program	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	27.400		0.000		15.319		-		15.319	Continuing	Continuing	Continuing
Ground Based Interceptor - GBI Component Lab Testing	C/CPIF	Boeing AL/AK/AZ/CA/CO/TX/VA:NASA WSTF, NM	0.000	47.756		0.000		2.574		-		2.574	0.000	50.330	0.000
Ground Based Interceptor - Ground Based Interceptors 34-44	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	429.644	192.168		116.956		95.648		-		95.648	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors 48-58	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	30.494		11.461		148.543		-		148.543	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors New Interceptor Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	39.114	58.195		59.789		42.759		-		42.759	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Prime Upgrades & Operational Spares	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	95.159	43.599		59.784		48.468		-		48.468	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Rotations for Ballistic Missile Defense System Level Testing	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	146.677	92.329		23.095		18.053		-		18.053	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Software Maintenance & Updates	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	9.590	6.517		11.550		7.793		-		7.793	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors Supplier Restart / Requalification	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	90.029	17.729		0.000		0.000		-		0.000	0.000	107.758	0.000

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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			
Ground Based Interceptor - Prime Reliability Program	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	4.364	20.168		12.607		16.986		-		16.986	Continuing	Continuing	Continuing
Ground Based Interceptor - Reliability Program	MIPR	AMRDEC / Redstone Arsenal, AL:NSWC Crane, Indiana	0.000	0.000		0.000		12.434		-		12.434	Continuing	Continuing	Continuing
Ground Based Interceptor - Return to Intercept Program	SS/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	27.317	13.396		0.000		0.000		-		0.000	0.000	40.713	0.000
Ground Based Interceptor - Upgrades and Operational Spares	MIPR	NSWC / Crane, Indiana:AMCOM Safety Office / Huntsville, AL	0.000	0.000		0.000		0.267		-		0.267	Continuing	Continuing	Continuing
Ground Systems - FGA Future Power Plant Integration	SS/CPAF	Boeing AL/AK/AZ:CA/CO/VA	0.000	27.128		0.000		0.000		-		0.000	0.000	27.128	0.000
Ground Systems - Fort Drum IDT	MIPR	MDA/AL:VA/NY	0.000	0.000		0.000		0.879		-		0.879	Continuing	Continuing	Continuing
Ground Systems - Ground Systems Engineering Services	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	39.378	0.000		1.359		0.000		-		0.000	0.000	40.737	0.000
Ground Systems - Ground Systems Hardware Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	0.000	0.016		15.964		0.453		-		0.453	0.000	16.433	0.000
Ground Systems - Ground Systems - MF-1 Refurbishment and Upgrade	TBD	TBD:AK/TBD	0.000	0.000		0.000		53.000		-		53.000	Continuing	Continuing	Continuing
Ground Systems - Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	0.000	0.000		7.714		0.000		-		0.000	0.000	7.714	0.000
Ground Systems - Long Haul Communications Transfer to Defense Information Systems Agency	MIPR	MDA:DISA	32.967	5.585		0.000		0.000		-		0.000	0.000	38.552	38.552

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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			
Ground Systems - Prime Fort Drum IDT	C/CPIF	Boeing AL:CO/NY/VA	0.000	4.653		7.600		0.045		-		0.045	Continuing	Continuing	Continuing
Ground Systems - Prime Ground Systems Software Development	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	27.804	62.350		33.183		60.868		-		60.868	Continuing	Continuing	Continuing
Ground Systems - Storage State MF-1	C/CPIF	Boeing AL/AK/AZ:CA/CO	0.000	0.000		4.155		0.000		-		0.000	0.000	4.155	0.000
Ground Systems - Upgrades for BMDS Level Testing	C/CPIF	Boeing AL/AK/AZ:CA/CO/VA	0.000	0.559		0.000		1.286		-		1.286	Continuing	Continuing	Continuing
Subtotal			942.043	650.042		365.217		525.375		0.000		525.375			

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			
Systems Engineering and Program Management - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	68.402	49.821		25.748		26.745		-		26.745	Continuing	Continuing	Continuing
Systems Engineering and Program Management - EKV HWIL Tests in Space Chamber	MIPR	AEDC:Tullahoma, TN	0.000	0.000		0.000		4.708		-		4.708	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Modeling and Simulation	MIPR	SED and McMorroW Labs:Redstone Arsenal/AL	0.000	0.000		0.000		10.676		-		10.676	Continuing	Continuing	Continuing
Systems Engineering and Program Management -	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	53.224	5.585		13.214		2.786		-		2.786	Continuing	Continuing	Continuing

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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
Prime EKV HWIL Tests in Space Chamber															
Systems Engineering and Program Management - Prime Modeling and Simulation	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	88.342	22.176		30.740		20.609		-		20.609	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime System Engineering and Integration	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	189.728	28.637		15.764		22.312		-		22.312	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime-Program Management	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		0.000		43.752		-		43.752	Continuing	Continuing	Continuing
Systems Engineering and Program Management - System Engineering and Integration	MIPR	MDA ARC / Colsa:Huntsville, AL	0.000	0.000		0.000		1.969		-		1.969	Continuing	Continuing	Continuing
Program Operations - Contract Support Services	C/CPFF	Sparta, BCF, Quantech, Paradigm:AL/AK/CA/CO/VA	194.729	33.763		38.619		33.866		-		33.866	Continuing	Continuing	Continuing
Program Operations - FFRDC Support	MIPR	MIT/LL:AL/VA/CO	16.742	5.242		2.107		4.687		-		4.687	Continuing	Continuing	Continuing
Program Operations - Global Deployment Support	MIPR	MDA:AL	53.847	5.242		0.000		0.000		-		0.000	0.000	59.089	76.065
Program Operations - Govt Civilian Salaries	MIPR	MDA:AL/VA	73.750	31.562		39.083		34.150		-		34.150	Continuing	Continuing	Continuing
Program Operations - Misc Software/BB/PCS	MIPR	MDA:AL/CA/VA/CO/AK	0.000	0.137		0.931		1.454		-		1.454	Continuing	Continuing	Continuing
Program Operations - Other Govt Agencies	MIPR	Various:AL/VA/FL/CO	15.300	4.975		3.154		4.972		-		4.972	Continuing	Continuing	Continuing

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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 Operations - Prime Program Management	C/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	221.220	35.959		17.024		0.000		-		0.000	0.000	274.203	0.000
Program Operations - Safety and Quality	MIPR	MDA:AL/AK/CA/VA	0.000	0.335		0.000		0.017		-		0.017	Continuing	Continuing	Continuing
Program Operations - Small Business Innovation Research (SBIR)	MIPR	MDA:AL/VA	0.000	0.000		16.675		0.000		-		0.000	Continuing	Continuing	Continuing
Program Operations - Travel	MIPR	MDA:AL/VA	0.000	2.000		1.346		1.345		-		1.345	Continuing	Continuing	Continuing
Sustainment - Colorado Springs Operations (Gov't Leases & Services)	MIPR	Air Force: COS, CO	8.200	7.084		0.000		0.000		-		0.000	0.000	15.284	0.000
Sustainment - Fort Greely, Alaska Operations (Gov't Leases & Services)	MIPR	Army: Ft. Greely, AK	38.729	19.604		0.000		0.000		-		0.000	0.000	58.333	0.000
Sustainment - Government Furnished Equipment & Services (GFX)	MIPR	Military Traffic Management Command: Various AL/AK/AZ/CA/CO/TX/VA	33.797	4.321		0.000		0.000		-		0.000	0.000	38.118	0.000
Sustainment - Maintenance of Primary System	C/CPIF	Boeing AL/AK/AZ:CA	340.137	49.147		0.000		0.000		-		0.000	0.000	389.284	0.000
Sustainment - Operations & Sustainment Repair and Maintenance Personnel	C/CPIF	Boeing AL/AK/AZ:CA	54.333	12.685		0.000		0.000		-		0.000	0.000	67.018	0.000
Sustainment - Sustaining Support Services	C/CPIF	Boeing AL/AK/AZ:CA	309.149	43.439		0.000		0.000		-		0.000	0.000	352.588	0.000
Sustainment - Vandenberg Air Force Base Operations (Gov't Leases & Services)	MIPR	Air Force: Vandenberg, CA	4.500	3.337		0.000		0.000		-		0.000	0.000	7.837	0.000
Sustainment - Warfighter Training	C/FPIF	Boeing AL/AK:CA/CO/VA	0.000	13.884		0.000		0.000		-		0.000	0.000	13.884	0.000

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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			
Subtotal			1,764.129	378.935		204.405		214.048		0.000		214.048			

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			
BMDS Level Testing - EKV HWIL Flight Tests in Space Chamber	MIPR	AEDC:Tullahoma, TN	0.000	7.284		0.000		0.000		-		0.000	0.000	7.284	0.000
BMDS Level Testing - Flight Test Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	137.872	31.860		0.000		0.000		-		0.000	0.000	169.732	0.000
BMDS Level Testing - Flight Test Range Costs	MIPR	VAFB, CA/RTS, Kwaj:PMRF, HI	24.486	15.781		0.000		0.000		-		0.000	0.000	40.267	0.000
BMDS Level Testing - Flight Test Silo Turnaround	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	7.420	3.444		0.000		0.000		-		0.000	0.000	10.864	0.000
BMDS Level Testing - Ground Test-04 Campaign (Focused-Integrated-Distributed)	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	15.640	3.114		0.000		0.000		-		0.000	0.000	18.754	0.000
BMDS Level Testing - Test Infrastructure & Support	C/CPAF	Boeing AL/AK/AZ:CA/CO/TX/VA	86.629	5.295		0.000		0.000		-		0.000	0.000	91.924	0.000
Subtotal			272.047	66.778		0.000		0.000		0.000		0.000	0.000	338.825	0.000

Remarks
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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>
---	---	---

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	2,978.219	1,095.755		569.622		739.423		0.000		739.423				

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</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
2nd FGA GMD Fire Control Node	▲																											
Fort Greely, Alaska Missile Field - 2	✦	✦																										
Fort Greely, Alaska Power Plant	✦	✦	✦	✦	✦																							
Ground Based Interceptors (34-44)	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Ground Based Interceptors (48-58)	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Ground Based Interceptors Rotation and Upgrades	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Ground-based Midcourse Defense Ground Test-04 test campaign		✧	✧	✧	✧	✧	✧	✧																				
Fort Drum, NY IDT		✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧																
Missile Field 1 Refurbishment and Upgrade									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧								

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MD08: <i>Ground Based Midcourse</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
2nd FGA GMD Fire Control Node	1	2012	1	2012
Fort Greely, Alaska Missile Field - 2	1	2012	2	2012
Fort Greely, Alaska Power Plant	1	2012	1	2013
Ground Based Interceptors (34-44)	1	2012	1	2016
Ground Based Interceptors (48-58)	1	2012	4	2018
Ground Based Interceptors Rotation and Upgrades	1	2012	4	2018
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2012	2	2014
Fort Drum, NY IDT	2	2012	1	2015
GM CTV-01 (GM Non-Intercept Flight Test)	3	2012	3	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
Ground Systems 6B3 (FQT)	4	2013	4	2013
Missile Field 1 Refurbishment and Upgrade	1	2014	4	2016
Ground Systems 6B4 (FQT)	1	2016	1	2016

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</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
MC08: <i>Cyber Operations</i>	-	0.000	0.000	2.124	-	2.124	2.126	2.129	2.132	2.135	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 MC08 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD08 of this PE.

A. Mission Description and Budget Item Justification

The funding in this project sustains 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 Ground-based Midcourse Defense (GMD) 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 Cybersecurity 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	2.124
Articles:	0	0	0
Description: The Network/Systems Certification and Accreditation project sustains the 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 Command and Control Battle Management and Communications (C2BMC) 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.			

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> A new Cyber Operations budget project (MC08) was created for FY 2014 - previous efforts funded from budget project MD08</p> <p><i>FY 2013 Plans:</i> A new Cyber Operations budget project (MC08) was created for FY 2014 - previous efforts funded from budget project MD08</p> <p><i>FY 2014 Plans:</i> -Fund Ground-based Midcourse Defense (GMD) Information Assurance Manager (IAM) civilian salaries. -Conduct cyber security / Information Assurance (IA) engineering and architecture planning for GMD information technology systems. -Plan and test the IA controls for Ballistic Missile Defense System (BMDS) GMD systems. -Develop GMD DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. -Conduct Controls Validation Testing (CVT) of GMD mission systems and provide Plan of Action and Milestones to mitigate IA deficiencies. -Conduct annual information assurance reviews on the GMD enclaves to assess compliance in implementing and maintaining IA controls.</p>				
Accomplishments/Planned Programs Subtotals		0.000	0.000	2.124
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</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			
Network / System Certification and Accreditation (C&A) - BMDs CND/IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton:MDA AL	0.000	0.000		0.000		0.541	Jul 2014	-		0.541	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies:MDA AL	0.000	0.000		0.000		1.425	Jul 2014	-		1.425	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	MIPR	MDA:AL/VA	0.000	0.000		0.000		0.158	Oct 2013	-		0.158	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.124		0.000		2.124			

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	2.124	0.000	2.124			

Remarks
N/A

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>
---	---	---

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

	FY 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 Cybersecurity Policy Development									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
GMD Transition to Cybersecurity Risk Management Framework (CRMf)									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
GMD Information Assurance Certification and Accreditation (C&A) Package Preparation/Submission									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
GMD Cybersecurity Program Policy / Risk Management									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
GMD Cybersecurity Mitigation Monitoring and Tracking									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MC08: <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMDS Cybersecurity Policy Development	1	2014	4	2018
GMD Transition to Cybersecurity Risk Management Framework (CRMF)	1	2014	4	2018
GMD Information Assurance Certification and Accreditation (C&A) Package Preparation/ Submission	1	2014	4	2018
GMD Cybersecurity Program Policy / Risk Management	1	2014	4	2018
GMD Cybersecurity Mitigation Monitoring and Tracking	1	2014	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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</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
MT08: <i>Ground Based Midcourse Test</i>	-	0.000	80.381	98.895	-	98.895	98.074	73.442	74.986	87.036	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

Budget Project MT08: Ground-based Midcourse Test consists of three accomplishment areas; Infrastructure, Flight Test, and Ground Test. Infrastructure consists of the support and framework required to successfully conduct both flight and ground testing. Flight Test and Ground Test accomplishments consist of the execution of the individual tests.

Ground-based Midcourse Defense (GMD) executes an enhanced test program that includes expanding our flight and ground test programs to demonstrate our Initial Homeland Defense and Enhanced Homeland Defense capabilities against long-range threats. The GMD elements of the BMDS Integrated Master Test Plan (IMTP) are intended to demonstrate the integrated missile defense capabilities under development and ensure the capabilities delivered to the Warfighter are operationally effective, suitable, and survivable.

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

	FY 2012	FY 2013	FY 2014
Title: Infrastructure	0.000	40.557	23.441
Articles:	0	0	0
Description: Provides support associated with day-to-day operations of the flight and ground test programs to include engineering support for ground test planning, execution, and post-event reconstruction.			
FY 2012 Accomplishments: See Budget Project MD08 for FY 2012 Accomplishments			
FY 2013 Plans: -Provide test infrastructure and coordination of flight test range support from Vandenberg Air Force Base, California for all range activities, engineering, operators and Ground Based Interceptor (GBI) transportation			

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Provide Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the Ground-based Midcourse Defense (GMD) system from Colorado Springs, CO</p> <p>-Support pre- and post-flight test mission communications to include fulfillment of Government Furnished Equipment (GFE) / Government Furnished Services (GFS) requirements and data analysis</p> <p>-Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs</p> <p>-Support risk reduction testing through the use of the Prime Consolidated Integration Lab designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment</p> <p>FY 2014 Plans:</p> <p>-Provide test infrastructure and coordination of flight test range support from Vandenberg Air Force Base, California for all range activities, engineering, operators and GBI transportation, including preparation for the first GBI salvo flight test</p> <p>-Provide Ballistic Missile Defense System (BMDS) flight and ground test execution situational awareness through the use of the Missile Defense Agency Integration and Operations Center (MDIOC) housing flight, ground and operational controlled assets of the GMD system from Colorado Springs, CO</p> <p>-Support pre- and post-flight test mission communications to include fulfillment of GFE /GFS requirements and data analysis</p> <p>-Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs</p> <p>-Support risk reduction testing through the use of the Prime Consolidated Integration Lab designed for engineering and integration activities leading up to scheduled flight tests and supported by appropriate analysts, environments and equipment</p> <p>Decrease due to Development and Sustainment Contract (DSC) efficiencies, lab consolidations, and innovations to test infrastructure. Additionally System Engineering and Program Management (SE/PM) costs were moved to the SE/PM accomplishment in FY 2014.</p>				
Title: Flight Test		0.000	27.119	67.242
		Articles: 0	0	0
Description: Flight tests demonstrate the capabilities and/or phenomenology that cannot be adequately tested or obtained during ground testing. Flight tests also provide opportunities to test actual hardware and to demonstrate Ballistic Missile Defense System (BMDS) Element interoperability under operationally realistic conditions.				
FY 2012 Accomplishments:				

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>		PROJECT MT08: <i>Ground Based Midcourse Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
See Budget Project MD08 for FY 2012 Accomplishments				
FY 2013 Plans: -Complete post-mission analysis for Flight Test Ground-based Midcourse Defense-06b (FTG-06b), a 3-stage Capability Enhancement II (CE-II) intercept engagement with associated objects, using a GBI launch from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS) -Initiate planning for the Flight Test Ground-based Midcourse Defense-08 (FTG-08), intercept engagement with associated objects, using a Ground Based Interceptor (GBI) launch from Vandenberg Air Force Base, California against an Intermediate Range Ballistic Missile (IRBM) target -Initiate planning for the Flight Test Ground-based Midcourse Defense-11 (FTG-11), a salvo intercept test against one Intercontinental Ballistic Missile (ICBM) target with associated objects, using GBIs launched from Vandenberg Air Force Base, California				
FY 2014 Plans: - Conduct Flight Test Ground-based Midcourse Defense Control Test Vehicle-02 (GM CTV-02), using a GBI launched from Vandenberg Air Force Base, California -Conduct Flight Test Ground-based Midcourse Defense-09 (FTG-09), using a GBI launched from Vandenberg Air Force Base, California against an IRBM target. The MDA is considering changes to the GMD flight test schedule pending final analysis of the CTV-01 test. Initial results indicate very robust performance of the CE-II EKV. If conclusive, we will eliminate CTV-02 in FY14 and instead fly the next CE-II intercept flight test (FTG-06b) in 1st quarter FY 2014, and plan to then conduct a second GBI Intercept Flight Test in late FY 2014. -Collect Critical Engagement Conditions (CEC) / Empirical Measurement Events (EME) data that validates Models and Simulations (M&S) -Initiate planning for the Flight Test Ground-based Midcourse Defense-11 (FTG-11), a salvo intercept test against one ICBM target with associated objects, using GBI launched from Vandenberg Air Force Base, California -Initiate planning to participate in the BMDS system-level Flight Test Other-10 (FTX-10), a Sensor Tracking Test				
Increase due to the increased costs for Prime contract and Test Range and Resources for the planning and execution of a flight test.				
Title: Ground Test		0.000	12.705	8.212
	Articles:	0	0	0
Description: Ground tests demonstrate and validate Warfighter tactics, techniques, and procedures. Ground tests are executed both in the Hardware-in-the-loop (HWIL) lab and in the field. HWIL lab tests integrate and assess Ballistic Missile Defense System				

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>(BMDS) system- level performance based on new element capabilities. Ground tests in the field use existing fielded element assets and tactical communication networks, to integrate, assess and demonstrate the new element capabilities.</p> <p><i>FY 2012 Accomplishments:</i> See Budget Project MD08 for FY 2012 Accomplishments</p> <p><i>FY 2013 Plans:</i> -Complete support and execution of BMDS Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors -Initiate planning of BMDS Ground Test-06 test campaign</p> <p><i>FY 2014 Plans:</i> -Demonstrate and test the mission functionality of the Ground-based Midcourse Defense (GMD) Ground Fire Control (GFC) version 6B2 BMDS capabilities using fielded assets and long haul communications networks during the Ground Test GTD-04e -Integrate with other BMDS elements and demonstrate GMD Ground Fire Control (GFC) 6B3 capabilities using a lab based Hardware-in-the-Loop (HWIL) Configuration during the Ground Test GTX-06a -Continue to support execution of BMDS Ground Test-06 test campaign to assess BMDS capabilities with integration of additional BMDS assets (Ft. Drum, NY In Flight Information Communication System (IFICS) Data Terminal (IDT), Clear and Cape Cod Upgraded Early Warning Radar (UEWR) Integration, and the Space-Based Infrared System (SBIRS) Increment 2 Change)</p> <p>Decrease due to DSC efficiencies.</p>			
Accomplishments/Planned Programs Subtotals	0.000	80.381	98.895

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	FY 2012	FY 2013	FY 2014 <u>Base</u>	FY 2014 <u>OCO</u>	FY 2014 <u>Total</u>	FY 2015	FY 2016	FY 2017	FY 2018	<u>Cost To Complete</u>	<u>Total Cost</u>
• 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

Remarks

D. Acquisition Strategy
The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
<p>the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities.</p> <p>GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing; and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program.</p> <p>E. Performance Metrics N/A</p>		

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</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			
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			
Infrastructure - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		7.753		9.236		-		9.236	Continuing	Continuing	Continuing
Infrastructure - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.004		0.000		-		0.000	0.000	1.004	0.000
Infrastructure - Systems Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.930		0.000		-		0.000	0.000	0.930	0.000
Flight Test - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.067		0.000		-		0.000	0.000	1.067	0.000
Flight Test - Systems Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.988		0.000		-		0.000	0.000	0.988	0.000
Ground Test - Prime Program Management	C/FPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.543		0.000		-		0.000	0.000	0.543	0.000
Ground Test - System Engineering	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.503		0.000		-		0.000	0.000	0.503	0.000
Subtotal			0.000	0.000		12.788		9.236		0.000		9.236			

Remarks

- Starting in FY 2014, Program Management and Systems Engineering moves back to MD08 due to the way the Development and Sustainment Contract (DSC) was awarded.

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

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			
Infrastructure - Additional Ground Test Activities	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.467		0.000		-		0.000	0.000	0.467	0.000
Infrastructure - Government Infrastructure Support, Labs, and Communications	MIPR	VAFB/AL:CO	0.000	0.000		0.000		8.358		-		8.358	Continuing	Continuing	Continuing
Infrastructure - Prime Infrastructure Support, Labs, and Communications	C/CPIF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.000		5.847		-		5.847	Continuing	Continuing	Continuing
Infrastructure - Support Infrastructure	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		9.693		0.000		-		0.000	0.000	9.693	0.000
Infrastructure - Test Communications	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		7.794		0.000		-		0.000	0.000	7.794	0.000
Infrastructure - Test Labs	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		12.916		0.000		-		0.000	0.000	12.916	0.000
Flight Test - Integration EKV HWIL Tests in Space Chamber	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.000		0.000		-		0.000	0.000	0.000	0.000
Flight Test - Planning and Silo Refurbishment	C/CPIF	Boeing AL/AK/AZ/CA:CO/OR/TX/VA	0.000	0.000		0.000		29.874		-		29.874	Continuing	Continuing	Continuing
Flight Test - Planning, Analysis & Execution	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		18.182		0.000		-		0.000	0.000	18.182	0.000
Flight Test - Range Costs	MIPR	VAFB, CA:RTS, Kwaj PMRF, HI	0.000	0.000		2.143		0.000		-		0.000	0.000	2.143	0.000
Flight Test - Range, Resources, and Engineering	MIPR	VAFB/CO:PMRF	0.000	0.000		0.000		37.368		-		37.368	Continuing	Continuing	Continuing
Flight Test - Silo Turnaround	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		4.739		0.000		-		0.000	0.000	4.739	0.000
Ground Test - Ground Test-04 Campaign	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		10.356		1.000		-		1.000	Continuing	Continuing	Continuing

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

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			
Ground Test - Ground Test-06 Campaign	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		1.303		3.659		-		3.659	Continuing	Continuing	Continuing
Ground Test - System Level Ground Test	C/CPAF	Boeing AL/AK/AZ/CA:CO/TX/VA	0.000	0.000		0.000		3.553		-		3.553	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		67.593		89.659		0.000		89.659			

Remarks

- Starting in FY 2014, Government Infrastructure Support, Labs, and Communications and Prime Infrastructure Support, Labs, and Communications now contains: Test Communications, Support Infrastructure, Test Labs, and Additional Ground Test Activities, due to the way the Development and Sustainment Contract (DSC) was awarded.
- Starting in FY 2014, Integration EKV HWIL Tests in Space Chamber moves to the Systems Engineering and Program Management accomplishment in MD08.
- Starting in FY 2014, Flight Test Planning and Silo Refurbishment were combined due to the way the Development and Sustainment Contract (DSC) was awarded.

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	0.000	0.000	80.381	98.895	0.000	98.895			

Remarks
N/A

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

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

	FY 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
Ground-based Midcourse Defense Ground Test-04 test campaign		✦	✦	✦	✦	✦	✦	✦	✦	✦																		
CTV-02 (GM Non-Intercept Flight Test) *											○																	
Ground-based Midcourse Defense Ground Test-06 test campaign											✦	✦	✦	✦	✦	✦												
FTG-09 (GM Intercept Flight Test) *											○																	
FTG-11 (GM SALVO Intercept Flight Test)															○													
Ground-based Midcourse Defense Ground Test-07 test campaign																	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
FTG-15 (GM Intercept Flight Test)																			○									
FTG-13 (GM Intercept Flight Test)																							○					
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												△

Note

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Ground-based Midcourse Defense Ground Test-04 test campaign	2	2012	2	2014
GTD-04e Part 1 (BMDS Distributed Ground Test) OT	1	2013	1	2013
GTI-04e Part 1 (BMDS Integrated HWIL Ground Test) DT/OT	1	2013	1	2013
GTI-04e Part 1 (BMDS Integrated HWIL Ground Test)	1	2013	1	2013
GTD-04e Part 1 (BMDS Distributed Ground Test)	2	2013	2	2013
GTI-04e Part 1a (BMDS Integrated HWIL Ground Test)	3	2013	3	2013
GTI-04e Part 1a (BMDS Integrated HWIL Ground Test) DT/OT	3	2013	3	2013
GTI-04e Part 2 (BMDS Integrated HWIL Ground Test)	4	2013	4	2013
GTI-04e Part 2 (BMDS Integrated HWIL Ground Test) DT/OT	4	2013	4	2013
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
CTV-02 (GM Non-Intercept Flight Test) *	2	2014	2	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
Ground-based Midcourse Defense Ground Test-06 test campaign	3	2014	1	2016
FTG-09 (GM Intercept Flight Test) *	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	4	2014	1	2015
GTD-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	3	2015	4	2015
FTG-11 (GM SALVO Intercept Flight Test)	4	2015	4	2015
GTD-06 Part 2 (BMDS Ground Test)	4	2015	1	2016

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MT08: <i>Ground Based Midcourse Test</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
GTX-07a (BMDS Ground Test)	1	2016	3	2016
Ground-based Midcourse Defense Ground Test-07 test campaign	1	2016	4	2018
GTI-07a (BMDS Ground Test)	2	2016	4	2016
FTG-15 (GM Intercept Flight Test)	4	2016	4	2016
GTD-07a Part 1 (BMDS Ground Test)	4	2016	1	2017
GTD-07a Part 2 (BMDS Ground Test)	1	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
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	3	2018	4	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2018	4	2018

Note
* Accelerated test schedules possible if certain RTI program knowledge points/criteria are met

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development 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
MX08: <i>Ground Based Midcourse Development Support</i>	-	0.000	207.133	142.856	-	142.856	152.208	155.397	163.185	170.067	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

Missile Defense Agency (MDA) will continue to provide for the operations, training, and sustainment of Ground-based Midcourse Defense (GMD) fielded capability at Fort Greely, Alaska; Eareckson Air Station, Alaska; Vandenberg Air Force Base, California; the Missile Defense Integration Operations Center (MDIOC), Colorado and across the nation-wide GMD Communications Network.

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

	FY 2012	FY 2013	FY 2014
Title: Sustainment	0.000	207.133	142.856
Articles:	0	0	0
Description: The Operations and Sustainment (O&S) mission provides for the operations, maintenance, repair, training, and sustaining engineering of the Ground-based Midcourse Defense (GMD) System. In addition to the above, O&S provides base operations support for GMD facilities in Colorado Springs, Colorado; Vandenberg Air Force Base, California; Fort Greely, Alaska and Eareckson Air Station, Alaska.			
FY 2012 Accomplishments: See Budget Project MD08 for FY 2012 Accomplishments			
FY 2013 Plans:			
-Continue to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites			
-Continue to support Base Operations at all GMD sites in accordance with host installation support agreements			
-Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability			
-Continue on-site sustaining engineering, for real time trouble shooting and ensuring logistics analysis is incorporated in technical data products			

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Continue to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System</p> <p>-Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs</p> <p>-Continue to identify and prioritize obsolescence issues for resolution to support Ground Systems Obsolescence Upgrade Program</p> <p>-Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system</p> <p>-Continue to develop and field technical manuals to maintain crew proficiency and support architecture baseline changes</p> <p><i>FY 2014 Plans:</i></p> <p>-Continue to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all GMD sites</p> <p>-Continue to support Base Operations at all GMD sites in accordance with host installation support agreements</p> <p>-Continue utilizing logistics repair analysis to optimize spares replenishment, and performance metrics to improve maintenance processes and procedures to improve weapon system reliability</p> <p>-Continue on-site sustaining engineering ensuring logistics analysis is incorporated in technical data products</p> <p>-Continue to perform failure analysis and resolve systemic issues to reduce sustainment costs</p> <p>-Continue to identify and prioritize replacement part issues for resolution to support Ground Systems Sustaining Engineering Program</p> <p>-Continue to provide training to qualify the Warfighter to operate the GMD Weapon System, as well as educating other staff members on the system</p> <p>-Continue to develop and field technical manuals to support maintenance, maintain crew proficiency, and support architecture baseline changes</p> <p>Decrease due to Development and Sustainment Contract (DSC) efficiencies, lower labor costs, and innovations to weapon system operation and maintenance and Warfighter training. Additionally System Engineering and Program Management (SE/PM) costs were moved to the SE/PM accomplishment.</p>			
Accomplishments/Planned Programs Subtotals	0.000	207.133	142.856

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

N/A

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</i>

D. Acquisition Strategy

The Ground-based Midcourse Defense (GMD) program will continue to follow testing, development, and evolutionary acquisition through incremental development. The Agency acquisition strategy ensures that the GMD components are upgraded to improve both system performance and interceptor reliability in order to retain the proven GMD contribution to the Integrated Ballistic Missile Defense System (BMDS). This acquisition approach minimizes the risk of parts availability, provides opportunities for incremental capability improvements, and allows decision makers to make informed trades between cost, schedule, and performance while exploring improved operational and technological capabilities.

GMD awarded a competitive Development and Sustainment Contract (DSC) on December 30, 2011. This contract continues development, fielding, test, systems engineering, integration, and configuration management; equipment manufacturing and upgrade; training, operations and sustainment of the GMD system and associated support facilities. The DSC emphasizes the application of performance-based tenets to provide timely high quality support of the core GMD system while reducing life cycle and long-term ownership costs. GMDs DSC acquisition strategy for transition of the legacy content into the DSC provides uninterrupted field operations; development of both Ground Systems and Interceptor (GBI) products, including manufacturing additional interceptors to support both operations and testing; and the requirement to demonstrate war fighting capability through a rigorous ground and flight test program.

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</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			
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			
Sustainment - Colorado Springs Operations	MIPR	Air Force COS:CO	0.000	0.000		3.905		3.920		-		3.920	Continuing	Continuing	Continuing
Sustainment - Fort Greely, Alaska Operations	MIPR	Army Ft. Greely:AK	0.000	0.000		19.196		19.675		-		19.675	Continuing	Continuing	Continuing
Sustainment - Government Furnished Property & Services	MIPR	Military Traffic Management Command:Various AL/AK/AZ/CA/CO/TX/VA	0.000	0.000		8.081		4.891		-		4.891	Continuing	Continuing	Continuing
Sustainment - Information Assurance	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		3.312		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Maintenance of Primary System	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		72.551		102.471		-		102.471	Continuing	Continuing	Continuing
Sustainment - Operations & Sustainment Repair and Maintenance Personnel	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		11.310		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Program Management	C/FPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		7.334		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - RAM-T	MIPR	Naval Surface Warfare Center:IN	0.000	0.000		3.245		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Sustaining Support Services	SS/CPIF	Boeing AL/AK/AZ:CA/VA	0.000	0.000		54.466		0.000		-		0.000	Continuing	Continuing	Continuing

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 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	PROJECT MX08: <i>Ground Based Midcourse Development 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			
Sustainment - Systems Engineering	C/CPIF	Boeing AL/AK/AZ:CA/CO/TX/VA	0.000	0.000		6.760		0.000		-		0.000	Continuing	Continuing	Continuing
Sustainment - Vandenberg Air Force Base Operations	MIPR	Air Force Vandenberg:CA	0.000	0.000		4.304		4.081		-		4.081	Continuing	Continuing	Continuing
Sustainment - Warfighter Training, Exercises, and Wargames	MIPR	MDA:AL/CO	0.000	0.000		12.669		7.818		-		7.818	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		207.133		142.856		0.000		142.856			

Remarks

- Starting in FY 2014, RAM-T has moved to the Ground Based Interceptor accomplishment in MD08.
- Starting in FY 2014, Sustainment Maintenance of Primary System now contains Sustaining Support Services and Operations & Sustainment Repair and Maintenance Personnel, due to the way the Development and Sustainment Contract (DSC) was awarded.
- Starting in FY 2014, Program Management and Systems Engineering moves back to MD08 due to the way the Development and Sustainment Contract (DSC) was awarded.

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

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

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>			PROJECT MX08: <i>Ground Based Midcourse</i> <i>Development Support</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	207.133		142.856	0.000	142.856			

Remarks

N/A

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</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>	-	47.558	46.036	50.605	-	50.605	47.135	47.271	43.054	38.431	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	47.558	46.036	50.605
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	47.558	46.036	50.605

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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</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	10.558		3.709	Mar 2013	10.827	Mar 2014	-		10.827	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA:Multi: AK, AL, CA, CO, VA	0.000	34.000		35.171	Oct 2012	33.350	Oct 2013	-		33.350	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (FFP)	C/FFP	PHACIL, INC:Multi: AK, AL, CA, CO, VA	0.000	0.000		0.240	Nov 2012	0.306	Nov 2013	-		0.306	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPR)	MIPR	Various:Multi: AK, AL, CO, CA, HI, VA	0.000	0.000		2.085	Apr 2013	2.280	Apr 2014	-		2.280	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	American Institute of Aeronautics & AS:VA	0.000	0.000		0.000		0.321	Feb 2014	-		0.321	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Sustainment Transportation	Reqn	Various:AK, AL, CA	0.000	0.000		0.344	Nov 2012	0.344	Nov 2013	-		0.344	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPFF	Utah St Univ; JHU/ APL LLC:Multi: MD, UT	0.000	0.000		1.310	Jan 2013	0.000		-		0.000	1.310	2.620	0.000
Program Wide Support - Facilities and Maintenance	MIPR	Various:Multi: AK, AL, CA, VA	0.000	3.000		3.177	Mar 2013	3.177	Mar 2014	-		3.177	Continuing	Continuing	Continuing
Subtotal			0.000	47.558		46.036		50.605		0.000		50.605			

Remarks
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 0603882C: <i>Ballistic Missile Defense</i> <i>Midcourse Defense Segment</i>			PROJECT MD40: <i>Program-Wide Support</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	47.558		46.036		50.605	0.000	50.605			

Remarks

N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603884C: <i>Ballistic Missile Defense Sensors</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	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

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 0603884C: *Ballistic Missile Defense Sensors*

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).

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 0603884C: *Ballistic Missile Defense Sensors*

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.

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</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
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
<p>Title: X-Band Basic Program</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: -Continued development of the Advanced Processor Platform (Superdome Obsolescence Program) -Continued development of selectable X-Band software builds (CX-1)</p> <p>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</p>	12.847 0	29.725 0	0.000 0

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>		PROJECT MD11: <i>BMDS Radars</i>
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>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>Articles:</p> <p>4.900 0</p>	<p>16.190 0</p>	<p>24.927 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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
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:				

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
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				

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>		
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
---	---	--

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

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 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>		

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDs Radars</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
---	---	--

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
---	---	--

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.

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
---	---	--

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

	FY 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)																											△	

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 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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MD11: <i>BMDS Radars</i>
---	---	--

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</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
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:			

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
---	---	---

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
---	---	---

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>
---	---	---

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

	FY 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	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									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MC11: <i>Cyber Operations</i>

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</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
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:			

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 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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
---	---	---

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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</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			
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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDs Radars Test</i>
---	---	---

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

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 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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
---	---	---

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

	FY 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																												✦

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
---	---	---

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

	FY 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-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																																△

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 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

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 0603884C: <i>Ballistic Missile Defense Sensors</i>	PROJECT MT11: <i>BMDS Radars Test</i>
---	---	---

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

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 0603884C: <i>Ballistic Missile Defense Sensors</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>	-	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

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 0603884C: <i>Ballistic Missile Defense Sensors</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 0603884C: <i>Ballistic Missile Defense Sensors</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		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

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603888C: <i>Ballistic Missile Defense Test & Targets</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	497.676	88.162	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	585.838
MD05: <i>Targets Program</i>	497.676	88.162	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	585.838

[#] 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

As part of the total Ballistic Missile Defense System (BMDS), the Test Program Element (PE) brings the BMDS element capabilities together for an integrated system-level test approach. Based on the Systems Engineering assessments of realistic threat scenarios, test events demonstrate capability of the evolving integrated layered missile defense system in a simultaneous test and operations environment. The Missile Defense Agency (MDA) employs a systematic review of BMDS testing that establishes a convention for setting test objectives that go beyond simply exercising newly delivered elements of the system. The BMDS Test Program establishes and documents in the Integrated Master Test Plan (IMTP) the test requirements for the BMDS with specific focus on collecting the data needed for the verification, validation and accreditation (VV&A) of the BMDS models and simulations (M&S). The BMDS performance evaluation strategy is to develop M&S of the BMDS and compare predictions to empirical data collected through comprehensive flight and ground testing to validate accuracy. Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) are the conditions and events which define or describe the data to be obtained from flight and ground tests in order to independently accredit M&S. CECs and EMEs are utilized to design a test to further advance the understanding and confidence of the M&S tool set that will be used to evaluate all possible engagements. MDA testing is based on an integrated developmental and operational test program. The MDA Test Program is based on a commitment to deploy technology that is proven, cost-effective, and adaptable to an evolving security environment. MDA, in full collaboration with its IMTP stakeholders: Combatant Commands; Service Operational Test Agencies (OTAs); Director, Operational Test & Evaluation; and Director, Developmental Test and Evaluation, develops and approves the IMTP which aligns the BMDS Test Program to the PAA phases for proven capability delivery. This PE provides consolidated MDA-wide capabilities and resources for the planning, design, execution, provision of infrastructure, and management of BMDS testing. This PE also provides funding to the Operational Test Agencies (OTA), which are active in all phases of test planning, execution and post-test analysis, to include the development of the IMTP. Also included in this PE is funding to the Targets and Countermeasures (TC) program office for the development and procurements of ballistic missile targets and countermeasures for the BMDS in support of the MDA flight test program. Targets are representative of feasible future threats and flight test requirements are derived from the CECs and EMEs and are documented in the Agency's IMTP.

The Test and Targets PE is grouped into two major areas: Test and Evaluation; Targets and Countermeasures. This PE also includes the test related program content: Concurrent, Test, Training, and Operations (CTTO); Engineering Test Analysis; Facilities, Siting, and Environmental Management; and Fielding and Integration.

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>
---	--

BMDS Test Program Functions:

- Directs the testing required to verify, validate, and accredit (VV&A) MDA`s models and simulation (M&S).
- Plans tests according to BMDS and Element objectives.
- Develops MDA test policy.
- Executes BMDS ground and flight tests.
- Ensures appropriate data is collected at the necessary fidelity.
- Collects data for BMDS analysis and manages MDA data centers.
- Provides BMDS and Element performance results for IMTP stakeholders.
- Provides final target system integration, target mission logistics and launch execution for BMDS test target systems.
- Provides test resources to support flight and ground tests.

Major Test Program Goals:

- Direct planning, execution, analyses, and reporting of BMD system test events to support system verification.
- Improve test execution and discipline for on-time, successful testing.
- Integrate Element test processes into BMDS processes.
- Develop Element Lessons Learned and Best Practices to support BMDS test design.
- Provide required infrastructure and environmental compliance for robust BMDS testing.
- Ensure test readiness, realism, and accuracy and improve test execution quality.

Targets and Countermeasures element level testing is funded as part of a developmental program and reflected in this Program Element (PE) submission. This PE also provides Targets and Countermeasures participation in the consolidated MDA-wide System Test Program and the resources for the planning, design, execution, and management of Targets and Countermeasures in BMD System testing in accordance with the BMDS Test Policy. This applies to all Flight, Integrated, Ground, and Distributed Ground Tests and Post-Test Analysis and reconstructions listed in the IMTP.

BMDS Targets and Countermeasures Functions:

As part of the total Ballistic Missile Defense System (BMDS), the BMDS Targets Program provides centrally managed targets and countermeasures development and procurement for a cost effective, integrated system-level test approach. The BMDS Targets Program has realized past and future savings by centralized competition and management of targets and countermeasures using efficient acquisition strategies and lot buys resulting in economies of scale and cost savings. Based on the systems engineering assessments of threat intelligence, the BMDS Program Element develops, builds, and supports the launch of Short Range Ballistic Missile (SRBM: Less than 100Km range) targets, Medium Range Ballistic Missile (MRBM: 1000-3000 Km Range) targets, Intermediate Range Ballistic Missile (IRBM: 3000-5500 Km Range) targets, Intercontinental Ballistic Missile (ICBM: Greater than 5500 km range) targets, and Multi-Class Components to test, verify, and validate the performance of the BMDS against feasible threat signatures. The Missile Defense Agency (MDA) BMDS Targets Program provides an economical and reliable inventory of targets

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>
---	--

which are representative of feasible future threats and demonstrate capability of the evolving layered missile defense system in a simultaneous test and operations threat environment.

Major Targets and Countermeasures Goals:

-Provide cost effective, reliable targets representative of feasible future threats; target performance planning; and BMDS modeling and simulation to the MDA test and engineering community.

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).

<u>B. Program Change Summary (\$ in Millions)</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	85.569	0.000	0.000	-	0.000
Current President's Budget	88.162	0.000	0.000	-	0.000
Total Adjustments	2.593	0.000	0.000	-	0.000
• 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	2.593	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

N/A

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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
MD05: <i>Targets Program</i>	497.676	88.162	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	585.838
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

Starting in FY 2012, BMD Test and Targets content moves to the following Program Elements: BMD Test and Evaluation PE 0603914C (Budget Project MT04), BMD Targets PE 0603915C (Budget Project MT05), and BMD C2BMC 0603896C (Budget Project MX01).

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 mission of the Missile Defense Agency (MDA) BMDS Targets program is to provide an economical and reliable inventory of targets that are representative of feasible future threats. These targets enable demonstration of the evolving layered missile defense system capability in operationally realistic scenarios. The BMDS Targets Program develops and acquires three target types across four target classes. The four target classes include: Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). The target types (Type 1-3) designate the complexity of the target within its class. Type-1 targets are simple baseline configurations. Type-2 targets have increased capability or complexity. Type-3 targets have unique configurations.

The BMDS Targets Program develops and provides Multi-Class Components that can be used across the spectrum of target types and classes. The BMDS Targets Program provides target digital models that enable MDA weapon system program offices to simulate end to end sensor and interceptor performance during pre-mission analysis. The BMDS Targets Program also provides maintenance, aging surveillance, refurbishment, and routine testing of government furnished equipment boosters and target components. Target requirements are derived from the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) that are documented in the Agency's Integrated Master Test Plan. The BMDS Targets Program develops and builds targets and countermeasures at multiple locations including: Courtland, AL; Orlando, FL; Chandler, AZ; and Albuquerque, NM. Storage and maintenance facilities are also located throughout the country including: Huntsville, AL; White Sands, NM; Ogden, UT; Camp Navajo, AZ; Hawthorne, NV; Tooele, UT; Courtland, AL; and Kodiak, AK.

The BMDS Targets Program consists of three major areas: Target Hardware, Program Operations, and Target Support.

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

	FY 2012	FY 2013	FY 2014
Title: Program Operations	0.956	0.000	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Articles:		0	0	0
<p>Description: Program Operations consisted of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that managed the overall Targets and Countermeasures (TC) program, to include engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance.</p> <p>FY 2012 Accomplishments: The personnel for TC enabled the program to develop, build, and evaluate targets that respond to the changing threat and meet requirements in the Integrated Master Test Plan. These personnel included the following:</p> <ul style="list-style-type: none"> -Other Government Agency (OGA) Civilians to provide support in the following functional areas: Engineering; Logistics; and Safety, Quality, and Mission Assurance -Contractor support services in the following functional areas: Engineering; Readiness; and Safety, Quality, and Mission Assurance; Security -FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering <p>Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Accomplishments.</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>				
Title: Target Support		17.897	0.000	0.000
Articles:		0	0	0
<p>Description: BMDS Target Program Support consists of two sub-elements. These are Systems Engineering/Program Management and Logistics.</p> <p>System engineering/program management provides target program technical direction to meet program requirements while balancing cost, schedule, performance, and risk. It conducts functional requirements allocation to product lines, defines product line specifications/interfaces, and follows guidelines for design reviews. It performs target system analysis to verify system performance, defines target program baselines, controls flight test configurations, and conducts pre and post-flight analysis. It identifies treaty and environmental issues and develops plans for issue resolution. It also includes Single Stimulation Framework (SSF)/Objective Stimulation Framework (OSF) compatible Modeling and Simulation execution and improvements to evolve TC</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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>		PROJECT MD05: <i>Targets Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>Modeling and Simulation capability; trajectory analyses; signature analyses and characterization; studies to assess alternative target and platform solutions; assessments of risk and mission assurance; and design approval of government furnished equipment.</p> <p>BMDS Targets Program logistics support provides the Missile Defense Agency (MDA) with target storage, aging surveillance, and transportation of TC hardware in support of BMDS testing. Also included are integrated logistics support for facilities, inventory maintenance, spare parts, aging surveillance, disposal, special testing for rocket motor propellants, and other hazardous material handling. This task manages and oversees accountability of all government furnished equipment and contractor acquired property. Logistics also provides common support equipment for launch vehicles, re-entry vehicles, associated objects, and all up integrated target rounds. It also supports launch site activations through the transportation of support equipment to various test sites.</p> <p>FY 2012 Accomplishments: System Engineering and Program Management: Performed program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <ul style="list-style-type: none"> -Continued Program Management and Business Operations for target components to provide a framework for overall management of the Targets program -Continued Information Technology support for Other Government Agencies (OGAs) so that subject matter experts could be used to support Target requirements -Continued Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure targets representative of future feasible threats technology is being incorporated into the Targets program -Continued Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success -Continued information technology and classified network support to ensure sensitive target information is not compromised -Continued Software Independent Verification and Validation (IV&V) for targets, including the Extended Medium Range Ballistic Missile (eMRBM) and Launch Vehicle-2 (LV-2), and Medium Range Ballistic Missile Type 3 (MRBM T3) to provide risk reduction of flight missions -Continued Missile Defense Agency Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat <p>Logistics:</p> <ul style="list-style-type: none"> -Continued C4 Motors storage, disposal, transportation, aging surveillance, and static fire support in order to sustain Launch Vehicle-2 (LV-2) 				
				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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>		PROJECT MD05: <i>Targets Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>-Continued Castor IVB sustainment and storage costs in order to support Medium Range Targets (MRT)</p> <p>-Continued Lance Missile sustainment, telemetry van sustainment and facilities sustainment costs</p> <p>-Continued Orbus 1A missile sustainment support to maintain the capability to build Extended Long Range Air Launch Targets (E-LRALT)</p> <p>-Continued Minuteman Motors storage, disposal, transportation, aging surveillance, and static fire costs in order to maintain the capability to build Extended Medium Range Ballistic Missile (eMRBM) and MRBM Type 3 targets</p> <p>-Continued Multi-Class Inventory storage, aging surveillance, and transportation support to ensure availability of Re-entry Vehicles (RVs) and ground support equipment</p> <p>-Continued Multi-Class Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification costs</p> <p>-Continued Castor IVA, GEM-40, and M-57 motor storage, transportation, and disposal</p> <p>-Initiated modification to expand the missile assembly building at Courtland, Alabama</p> <p>Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Accomplishments.</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>				FY 2013
				FY 2014
Title: Target Hardware		Articles:	69.309	0.000
			0	0
<p>Description: Target Hardware included the design and build of Short Range Ballistic Missile (SRBM) targets, Medium Range Ballistic Missile (MRBM) targets, Intermediate Range Ballistic Missile (IRBM) targets, and common payloads and components. It provided for support of specific flight tests in the areas of pre-mission and post-mission analysis. Missile Defense Agency's Test Directorate is responsible for all target launch operations to include range coordination and use, transportation of equipment and target hardware to the range, and launch execution.</p> <p>Specifically, target development effort provided for the non-recurring engineering (NRE) development of Short Range Ballistic Missile (SRBM), Medium Range Ballistic Missile (MRBM), Intermediate Range Ballistic Missile (IRBM), reentry vehicle, and associated object systems to support Ballistic Missile Defense System (BMDS) flight testing. It included short, medium, intermediate and long range target systems with air, sea, and ground launch capabilities as well as enhancements to legacy target systems for cost effective target solutions. Efforts included requirements decomposition, design, qualification testing, and characterization. It included ensuring boosters, inter-stages, avionics systems, reentry vehicles, payload deployment</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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>modules, and associated objects adhered to interface specifications and met reliability, mission assurance, and cost goals. Efforts addressed target producibility, manufacturing maturity, and affordability. Supporting this objective were the necessary modeling and simulation efforts, analyses, configuration management, technical interchange meetings, and design reviews resulting in designs that meet BMDS requirements.</p> <p>The manufacturing of target hardware included the development of full up targets and target components for SRBM, MRBM, and IRBM assets. It included integrated or component ballistic missile flight test hardware (launch vehicles, reentry vehicles, associated objects, and kits); target characterization; quality and mission assurance; government furnished equipment and services; and transportation and logistics support. Target requirements are delineated in the MDA Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p>FY 2012 Accomplishments: Target requirements are delineated in the MDA Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p>FY 2012 Base Plans were to develop, build, and support the launch of the following target types to enable BMDS testing and validation of the BMDS weapon system performance:</p> <p>Short Range Ballistic Missiles (SRBM):</p> <ul style="list-style-type: none"> -Aegis Readiness Assessment Vehicle-C (ARAV-C) - Continued development of Ship Sets 4-5 to support pre-ship readiness reviews in FY 2013 and FY 2014, respectively -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiated development of Ship Sets 11-13, 16, and 17 to support future flight test requirements -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Initiated development of Ship Sets 10-12 to support pre-ship readiness review in FY 2013 -Continued development of all other SRBMs in support of the current IMTP <p>Medium Range Ballistic Missile (MRBM):</p> <ul style="list-style-type: none"> -Extended Medium Range Ballistic Missile (eMRBM) - Continued development of Ship Set 1 to support pre-ship readiness review in FY 2013; initiated development of Ship Sets 2-5 to support future flight test requirements -Extended Long Range Air Launch Target (ELRALT) - Delivered Ship Sets 1 to support FTI-01 (FTO-01 Risk Reduction Flight Test); and continued development of Ship Set 2 to support future flight test requirements 			

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-MRBM Type 3 (MRBM T3) - Continued development of Ship Set 1 to support pre-ship readiness review in FY 2014; initiated development of Ship Sets 2-4 to support future flight test requirements -Continued development of all other MRBMs in support of the current IMTP</p> <p>Intermediate Range Ballistic Missile (IRBM):</p> <p>-Launch Vehicle 2 (LV-2) - Continued development of Ship Set 4 to include qualification testing to support pre-ship readiness review in FY 2013 -IRBM T1/T2 - Continued development of Ship Sets 1 thru 6 to support future flight test requirements -Continued development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Multi-Class Components:</p> <p>-Continued development of Modified Ballistic Re-Entry Vehicle-5 (MBRV-5) to include build of the Attitude Control Module (ACM) to support planned FY 2014 production unit deliveries -Continued development and delivery of MBRV-7 to include build of the separation system to support planned deliveries of Extended Medium Range Ballistic Missile Ship Sets 1 and 2 in FY 2013 -Continued development of MBRV-8 to include completion of the Re-Entry Vehicle Separation Module (RVSM) to support initial delivery in FY 2013 -Continued development of all other Re-entry Vehicles, Associated Objects, and Motors in support of the current Integrated Master Test Plan.</p> <p>Refer to Project MT05 in Program Element 0603915C for the balance of FY 2012 Accomplishments.</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>				
Accomplishments/Planned Programs Subtotals		88.162	0.000	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
---	--	--

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
• 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

Remarks

D. Acquisition Strategy

The Missile Defense Agency's (MDA) Targets and Countermeasures Program Office (TC) provides for the development and procurement of ballistic missile targets and countermeasures for the Ballistic Missile Defense System in support of the MDA's flight test program. Target requirements are derived from the Agency's Integrated Master Test Plan (IMTP).

Based on the Acquisition Plan for TC's Prime Contract (9 July 2003), MDA competed and awarded a prime contract to Lockheed Martin Space Systems Company (LMSSC) on 9 December, 2003 for the development of the Flexible Target Family (FTF). Targets in the short, medium, and intermediate range as well as reentry vehicles are procured using this contract.

Based on the TC's Medium Range Targets Acquisition Plan (6 June 2008), TC awarded a sole source firm fixed price contract to the Orbital Sciences Corporation ground launched MRT/RV targets in June 2008. This award was based upon the requirement for target consistency resulting in a unique target/RV configuration to support testing of the Aegis Weapon System. A total of three targets have been procured on this contract with one asset remaining in inventory.

Based on TC's Acquisition Plan (3 November 2009), TC competitively awarded a prime contract to Orbital Sciences Corporation on 7 March 2011 for the design and development (cost plus) and delivery (fixed-price incentive fee) of eight air-launched Intermediate Range Ballistic Missile (IRBM) targets. This award includes two follow-on options; one for eight IRBM targets and one for one to six IRBM targets.

The Sounding Rocket Program 3 (SRP-3) contract is managed by the US Air Force Space and Missile Systems Center, Space Development and Test Directorate at Kirtland AFB, NM to provide air launched target systems. The SRP-3 contract has 4 prequalified vendors (Orbital Sciences Corporation, Alliant Tech Systems, L-3 Communications - Coleman Aerospace (Coleman), and Space Vector Corp) that are able to compete for new task orders to develop targets on this contract. To date, Coleman is the only vendor that has been awarded task orders on this contract.

The Solid Rocket Motor Technical Services Contract was awarded to Alliant Tech Systems in May 2005 and provides aging and surveillance, refurbishment, transportation, testing, and sensitivity studies for MDA TC solid rocket motors to include A3, C4, Orbus 1/1A, GEM, and Castor IV variants. A follow-on, sole source contract was awarded 30 September 2011.

The Aegis Readiness Assessment Vehicle (ARAV) target effort is managed by TC and the Naval Surface Warfare Center Port Hueneme Division White Sands (NSWC PHD WS). NSWC PHD WS has unique sounding rocket expertise and access to existing contracts managed by White Sands Missile Range that makes this a beneficial

UNCLASSIFIED

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	MD05: <i>Targets Program</i>

relationship for both parties. TC provides targets funding via Military Interdepartmental Purchase Orders that NSWC PHD WS expends on its hardware development and engineering contracts. In addition, TC provides funding to Sandia National Labs in support of the Attitude Control Module (ACM) development effort for the ARAV Group C target. NSWC PHD WS manages the integration of the ACM onto the launch vehicle. The MDA Test Directorate is responsible for funding all launch services of these targets in support of the IMTP.

Targets and Countermeasures (TC) is currently in various stages of planning or execution for procurement of ballistic missile targets by range class: Short Range (SRBM), Medium Range (MRBM), Intermediate Range (IRBM), and Intercontinental Range (ICBM). These targets will be procured using a Target Performance Specification to support flight test requirements as identified in the Integrated Master Test Plan (IMTP). Each target class will be solicited, evaluated, and awarded independently in IMTP ``need date`` priority order.

Within each target class, capabilities are further segregated and designated as a class type. Type 1, Type 2, and Type 3 capabilities are defined as follows:

Type 1: A Type 1 target is the baseline (simple) configuration for the class. A Type 1 target satisfies the minimum target requirements to provide the baseline capability for each target class. The baseline configuration represents the complete vehicle stack-up and includes: 1-n boosters, attitude control system, test object, flight termination system, housekeeping and environmental instrumentation, and telemetry. For example, the basic configuration of an LV-2 target is representative of a Type 1 configuration in the intermediate range class.

Type 2: A Type 2 target requires more advanced or complex performance capabilities. Type 2 capabilities may be included in the baseline Type 1 configuration or provided as configuration kits that can be added to the baseline configuration. Type 2 kits may include the following: countermeasures and associated deployment capability, enhanced targeting and aimpoint accuracies, selectable booster and test object dynamics, tailored separation debris, temperature sensors, hit location and miss distance instrumentation, onboard sensors, deployable fly along sensors, and/or lethality payloads. For example, the LV-2 target with countermeasures or additional payloads is representative of a Type 2 configuration in the intermediate range class.

Type 3: A Type 3 target is a unique configuration procured in low unit quantities. Type 3 targets encompass unique threat characteristics or test conditions (i.e. Ground Based Midcourse Defense high velocity engagement scenario) not achievable with a Type 1 or Type 2 configuration. For example, a mobile launched ICBM Type 1 or Type 2 target is representative of a Type 3 configuration in the intercontinental range class.

TC is in the process of transitioning from a `just-in-time` approach to delivering unique targets to meet specific flight test requirements to more of a production based strategy geared towards building an inventory of product lines able to meet multiple test requirements. Work under existing contracts/orders will run to completion rather than being transitioned to a new contractor(s).

Future targets may be procured under the new acquisition competitive Request for Proposals unless the new acquisitions would result in higher cost, delivery delays, or less capable targets. TC will procure pre and post mission planning, data products, support to modeling and simulation and ground test, inventory sustainment and management, and flight test execution.

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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			
Program Operations - Government Support - 1	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	2.226	0.059		0.000		0.000		-		0.000	0.000	2.285	0.000
Program Operations - Personnel Support - 1	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	45.481	0.249		0.000		0.000		-		0.000	0.000	45.730	0.000
Program Operations - Personnel Support - 15	C/FFP	Colsa Corporation:Huntsville, AL	0.523	0.070		0.000		0.000		-		0.000	0.000	0.593	0.000
Program Operations - Personnel Support - 6	FFRDC	Johns Hopkins University Applied Physics Lab:Laurel, MD	3.055	0.031		0.000		0.000		-		0.000	0.000	3.086	0.000
Program Operations - Personnel Support - 7	MIPR	US Air Force Space and Missile Systems Center (SMC:Kirtland AFB, NM	1.781	0.378		0.000		0.000		-		0.000	0.000	2.159	0.000
Program Operations - Personnel Support - 8	MIPR	US Army Aviation and Missile Command:Huntsville, AL	3.482	0.169		0.000		0.000		-		0.000	0.000	3.651	0.000
Target Support - Log - 1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	29.926	1.057		0.000		0.000		-		0.000	0.000	30.983	0.000
Target Support - Log - 12	MIPR	New Mexico State Univ. Physical Sciences Lab:Las Cruces, NM	2.349	0.300		0.000		0.000		-		0.000	0.000	2.649	0.000
Target Support - Log - 13	MIPR	Naval Surface Warfare Center:Crane, IN	14.108	3.884		0.000		0.000		-		0.000	0.000	17.992	0.000
Target Support - Log - 18	MIPR	United States Property &	7.996	0.935		0.000		0.000		-		0.000	0.000	8.931	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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			
		Fiscal Office for Arizona:Phoenix, AZ													
Target Support - Log - 2	C/CPFF	Alliant Techsystems:Magna, UT	2.674	0.791		0.000		0.000		-		0.000	0.000	3.465	0.000
Target Support - Log - 3	C/FFP	Aerojet Corporation:Albuquerque, NM	2.356	0.100		0.000		0.000		-		0.000	0.000	2.456	0.000
Target Support - Log - 4	C/FFP	Alliant Techsystems, Inc. (ATK):Magna, UT	18.392	0.941		0.000		0.000		-		0.000	0.000	19.333	0.000
Target Support - Log - 9	MIPR	Hill Air Force Base:Ogden, UT	3.583	0.400		0.000		0.000		-		0.000	0.000	3.983	0.000
Target Support - Sys Eng - 1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	116.735	0.705		0.000		0.000		-		0.000	0.000	117.440	0.000
Target Support - Sys Eng - 13	MIPR	Missile Defense Agency:Arlington, VA	6.016	4.748		0.000		0.000		-		0.000	0.000	10.764	0.000
Target Support - Sys Eng - 2	C/FFP	The Analytic Sciences Corporation (TASC):Albuquerque, NM	6.103	1.671		0.000		0.000		-		0.000	0.000	7.774	0.000
Target Support - Sys Eng - 3	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	8.092	0.018		0.000		0.000		-		0.000	0.000	8.110	0.000
Target Support - Sys Eng - 4	C/FFP	Wyle Laboratories:Huntsville, AL	1.915	0.285		0.000		0.000		-		0.000	0.000	2.200	0.000
Target Support - Sys Eng - 5	FFRDC	Johns Hopkins University Applied Physics Lab:Baltimore, MD	5.942	0.500		0.000		0.000		-		0.000	0.000	6.442	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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			
Target Support - Sys Eng - 6	FFRDC	Aerospace Corporation:El Segundo, CA	3.191	0.679		0.000		0.000		-		0.000	0.000	3.870	0.000
Target Support - Sys Eng - 7	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	7.726	0.650		0.000		0.000		-		0.000	0.000	8.376	0.000
Target Support - Sys Eng - 9	MIPR	US Air Force Space & Missile Systems Center (SMC):Kirtland AFB, NM	1.479	0.233		0.000		0.000		-		0.000	0.000	1.712	0.000
Target Hardware - IRBM-1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	0.000	0.174		0.000		0.000		-		0.000	0.000	0.174	0.000
Target Hardware - IRBM-2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	0.766		0.000		0.000		-		0.000	0.000	0.766	0.000
Target Hardware - MRBM - 1	C/CPAF	Lockheed Martin Space Systems:Courland, AL	77.328	19.979		0.000		0.000		-		0.000	0.000	97.307	0.000
Target Hardware - MRBM - 3	C/CPIF	L3 Communications/ Coleman Aerospace:Orlando, FL	115.462	3.970		0.000		0.000		-		0.000	0.000	119.432	0.000
Target Hardware - Multi-Class - 5	C/CPAF	Lockheed Martin Space Systems:Courland, AL	9.755	19.931		0.000		0.000		-		0.000	0.000	29.686	0.000
Target Hardware - SRBM - 1	C/CPIF	L3 Communications/ Coleman Aerospace:Orlando, FL	0.000	9.301		0.000		0.000		-		0.000	0.000	9.301	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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			
Target Hardware - SRBM-2	MIPR	Naval Surface Warfare Center, Port Hueneme:Port Hueneme, CA	0.000	15.188		0.000		0.000		-		0.000	0.000	15.188	0.000
Subtotal			497.676	88.162		0.000		0.000		0.000		0.000	0.000	585.838	0.000

Remarks
All Budget Project MD05 funds support BMDS-Level Testing.

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>
---	--	--

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			

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	497.676	88.162		0.000		0.000		0.000		0.000	0.000	585.838	0.000

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</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
IRBM Type 1/Type 2 Preliminary Design Review		▲																										
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)		▲																										
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)		▲																										
e MRBM Critical Design Review		▲																										
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)			▲																									
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)			▲																									
IRBM Type 1/Type 2 Critical Design Review				▲																								
E-LRALT Pre-Ship Readiness Review (Ship Set 1)				▲																								
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)				▲																								

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 0603888C: <i>Ballistic Missile Defense Test & Targets</i>	PROJECT MD05: <i>Targets Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
IRBM Type 1/Type 2 Preliminary Design Review	2	2012	2	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)	2	2012	2	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)	2	2012	2	2012
e MRBM Critical Design Review	2	2012	2	2012
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 14)	2	2012	2	2012
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)	3	2012	3	2012
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
IRBM Type 1/Type 2 Critical Design Review	4	2012	4	2012
E-LRALT Pre-Ship Readiness Review (Ship Set 1)	4	2012	4	2012
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)	4	2012	4	2012

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603890C: <i>BMD Enabling 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	657.474	404.311	362.711	377.605	-	377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
MD24: <i>System Engineering & Integration</i>	248.553	134.820	88.315	102.979	-	102.979	114.347	150.794	180.920	316.106	Continuing	Continuing
MT23: <i>Enabling - Test</i>	-	0.000	32.386	42.850	-	42.850	65.609	41.407	37.078	35.661	Continuing	Continuing
MD28: <i>Intelligence & Security</i>	61.494	18.937	36.886	32.161	-	32.161	32.194	34.323	33.939	35.542	Continuing	Continuing
MD30: <i>BMD Information Management Systems</i>	106.012	120.313	107.744	92.488	-	92.488	97.019	94.893	105.198	91.517	Continuing	Continuing
MC30: <i>Cyber Operations</i>	-	0.000	0.000	17.443	-	17.443	16.355	16.567	18.445	17.415	Continuing	Continuing
MD31: <i>Modeling & Simulation</i>	176.406	50.181	46.608	41.223	-	41.223	32.667	45.358	47.073	51.083	Continuing	Continuing
MD32: <i>Quality, Safety, and Mission Assurance</i>	65.009	28.528	34.388	30.140	-	30.140	30.905	32.006	31.834	31.949	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	51.532	16.384	18.321	-	18.321	17.887	19.313	21.957	22.013	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 Ballistic Missile Defense (BMD) System Enabling Programs provide the Missile Defense Agency (MDA) with the critical products and processes needed to integrate element missile defense systems into a layered Ballistic Missile Defense System (BMDS) providing the capability required by the BMD Review, while improving protection performance with increased defended area, and minimizing force structure costs. BMD System-level engineering and integration enables interoperability and drives future capability development from a System perspective to maximize the effectiveness of BMD technologies. Specifically, the Enabling Programs independently evaluate the integrated BMD System methodology, threat, manufacturing maturity, technical safeguards, and mission assurance effectiveness while simultaneously assessing whether the System is proficient at maintaining its integrity and superiority with advances in technology development. As a result, MDA is able to provide evolving, integrated and layered BMDS performance and capabilities that have been thoroughly assessed and validated through testing and Modeling and Simulation.

The MDA Enabling Programs are:

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 0603890C: <i>BMD Enabling Programs</i>
---	---

-(MD24) Systems Engineering and Integration (SE&I) - Systems Engineering and Integration leads the integration of the Ballistic Missile Defense (BMD) System using Element and Component capabilities to provide the Warfighter with the ability to defend the United States and its friends and allies from ballistic missile attacks. Systems Engineering defines and develops integrated BMD System capability improvements through BMD level control of system requirements, and allocates those requirements to the Element and Component levels most capable of supporting intercepts in a particular Phased Adaptive Approach (PAA) phase.

-(MT23) Enabling-Test - The Enabling Programs Test project drives BMDS test planning, execution and post-test assessment and provides critical data for proving that missile defense works.

-(MD28) Intelligence and Security - MDA develops data from intelligence sources into the necessary engineering products that drive the design, development, and testing used to inform and support internal MDA decisions and BMD System design reviews. Engineering processes translate missile data into threat parameter space and generate threat scenarios contained in the SE&I-developed Adversary Capability Document. These products are also necessary for system ground testing, hardware-in-the-loop testing, and the target development for live-fire testing necessary to assess system operation and verify and validate system performance. Security is also provided as an Enabling Program to apply protection across the entire BMDS.

-(MD30) Information Management Systems - Information Management is vital to the efficient operation and safeguarding of all information, from development to fielding new BMDS capabilities.

-(MC30) Cyber Operations - The Cyber Operations project is a new project established in FY2014. The funds in this project were realigned from MD30 (BMDS Information Management Systems) to sustain MDA's DoD Information Assurance Certification and Accreditation Program (DIACAP) and Controls Validation Testing (CVT) activities. It also funds the MDA Security Operations Center (SOC), responsible for monitoring, managing, patching, and maintaining MDA network and core IT services; issuing and tracking Technical Compliance Orders; and coordinating overarching Enterprise NetOps. The MDA Computer Emergency Response Team (CERT), funded in this project, monitors the classified and unclassified information technology MDA administrative IT networks and report vulnerabilities. The MDA CERT coordinates with U.S. Cyber Command to identify and implement network vulnerability updates and patches to comply with U.S. Cyber Command vulnerabilities identified for DoD networks. The project also funds IA governance management and administrative management support, annual Agency-wide computer-based IA training and metrics reporting, implementation of Public Key Infrastructure and Enabling and Communications Security (COMSEC) related activities.

-(MD31) Modeling and Simulation - As missile defense technologies continually advance and the threat changes, Modeling and Simulation develops system-level models, simulations, and environments, then evaluates performance of the Elements, Components, and overall BMD System.

-(MD32) Quality, Safety, and Mission Assurance - Quality, Safety, and Mission Assurance has the distinct management role of improving quality, safety, and mission assurance throughout the product life cycle of design, manufacturing, test and system operation, in order to achieve a safe and reliable BMD System.

-(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).

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 0603890C: <i>BMD Enabling Programs</i>
---	---

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	415.048	362.711	339.197	-	339.197
Current President's Budget	404.311	362.711	377.605	-	377.605
Total Adjustments	-10.737	0.000	38.408	-	38.408
• 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	4.539	0.000			
• SBIR/STTR Transfer	-15.276	0.000			
• Other Adjustment	0.000	0.000	38.408	-	38.408

Change Summary Explanation

The FY 2014 adjustments reflect 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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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
MD24: <i>System Engineering & Integration</i>	248.553	134.820	88.315	102.979	-	102.979	114.347	150.794	180.920	316.106	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

Systems Engineering and Integration (SE&I) continues to develop and improve the integrated Ballistic Missile Defense System (BMDS) architectures, engineer major improvements to regional Ballistic Missile Defense (BMD) capabilities, and provide system improvements that enable earlier BMD engagements and development of the BMDS level Models and Simulations (M&S) necessary to support BMDS testing and delivery to the Warfighter. Systems Engineering and Integration is the single team that applies its technical expertise and tools across many disciplines and specialties to lead a collaborative effort to define, design, test and integrate the Ballistic Missile Defense System. SE&I develops technical roadmaps, knowledge points, and capability trades at the BMDS level to balance integration and improvement efforts. The SE&I workforce, including Industry and Contractor Support Services (CSS), also provides analysis, decision-making and planning activities for real-world operations to the National Command Authority, Joint Staff, Military Services, North Atlantic Treaty Organization (NATO), Combatant Commanders, Operational Test Agencies, Director of Operational Test and Evaluation, Allies, and others.

Fundamental to the System Engineering and Integration (SE&I) approach is development, coordination, and dissemination of fully vetted products at each stage of the SE&I process. These products document and communicate key information such as: technical goals and objectives, design trades and resulting decisions to update system design and interface requirements; integration plans and schedules; test objectives that include the collection of data needed to anchor the system representative models and simulations and enable independent verification and validation; assessment through ground and flight test results; and fielding plans.

The system engineering process defines required system-wide behavior, validates Element system designs, and assesses and verifies system capabilities in 5 stages: 1) Future Concepts and Planning; 2) Requirements and Design; 3) Integrated Master Test Plan (IMTP) Engineering; 4) Integration; and 5) Verification and Assessment.

Additional engineering efforts cross multiple stages of the system engineering process: Countermeasures/Counter-countermeasures (CM/CCM), Threat Systems Engineering, Engineering Analysis and Quick Response Team, Anti-Tamper, Manufacturing, Reliability and Producibility, International Engineering, and Engineering Manufacturing Readiness Levels Development programs.

UNCLASSIFIED

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 0603890C: <i>BMD Enabling Programs</i>	MD24: <i>System Engineering & Integration</i>

System Engineering and Integration (SE&I) Major Program Goals:

- Develop, design, test and integrate a layered BMDS that provides the required Ballistic Missile Defense performance
- Provide system-level support to the Elements, and lead collaborative cross-Element, cross-Component engineering
- Develop the European Phased Adaptive Approach (EPAA) architecture and requirements to respond to the proliferation of short and medium range ballistic missiles, provide a more effective missile defense capability for U.S. deployed forces, allies, and partners in Europe, and enhanced homeland defense
- Provide technical direction to Element and Component developers and provide System-level forums to track, assess, and improve hardware and software reliability
- Define the BMD threat space and identify BMDS capabilities and limitations
- Verify and Assess BMDS performance and capabilities through testing
- Develop Ballistic Missile Defense System Performance Assessment parameters
- Identify the Critical Engagement Conditions and data required to develop the test campaigns that will demonstrate regional defense performance, and verify and assess the capability of each Phased Adaptive Approach
- Define the test objectives necessary to anchor BMDS-level models and simulations, enable independent verification and validation, and identify System issues occurring in ground and flight tests
- Analyze architecture alternatives and new technologies to establish technical roadmaps for future capabilities and ensure the BMDS is complementary to and interoperable with NATO and other theater systems
- Provide detailed analysis to support MDA leadership and US policy decisions
- Develop anti-tamper approaches to enable international fielding of the BMDS

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

	FY 2012	FY 2013	FY 2014
<p>Title: Future Concepts and Planning</p> <p align="right">Articles:</p> <p>Description: Future Concepts performs functional trades and analysis, and develops initial requirements and design integration and documentation for future Ballistic Missile Defense System (BMDS) capabilities.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Completed the ongoing Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies and updated the concept capability documentation based on its results and the results of technology development experiments. - Refined the Capability Planning Specification for Precision Tracking Space System (PTSS) and the future Command and Control Battle Management and Communications (C2BMC) components, leading to BMD System Requirements Reviews based on the architectural trade studies. - Supported technology development reviews for Precision Tracking Space System (PTSS), and Standard Missile-3 (SM-3) Block IIB in preparation for BMD System Requirements Reviews based on the architectural trade studies. - Developed the Capability Planning Specification for the Aegis 5.X weapon system and the Standard Missile 3 (SM-3) Block IIB. - Produced an updated BMDS Lethality Program Plan to encompass lethality assessment, collateral effects and consequences - Assessed and added emerging threats to Missile Defense Agency lethality prediction models. 	<p>8.963</p> <p>0</p>	<p>10.181</p> <p>0</p>	<p>9.642</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Supported Defense Threat Reduction Agency (DTRA)/Missile Defense Agency efforts to provide consequence model predictive capabilities. - Maintained the BMDS System Engineering Plan ensuring synchronization of Element System Engineering Plans with the System document. - Countermeasures (CM)/Counter-countermeasures (CCM) Red Team: <ul style="list-style-type: none"> -- Completed initial independent adversary (Red Team) perspective on Phased Adaptive Approach (PAA) capabilities -- Completed independent adversary (Red Team) perspective on adversary attack strategy against PAA -- Completed independent adversary (Red Team) selection of integrated countermeasure suites to be evaluated in FY 2013 <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Complete concept capability documentation updates based on the results of the Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies and technology development experiments. - Refine the Capability Planning specifications for Precision Tracking Space System (PTSS) and the future Command and Control Battle Management and Communications (C2BMC) components. - Support technology development reviews for Precision Tracking Space System (PTSS), and Standard Missile-3 (SM-3) Block IIB in support of follow on development efforts. - Develop the Capability Planning Specification for the Aegis 5.x weapon system and the Standard Missile 3 (SM-3) Block IIB. - Produce an updated BMDS Lethality Program Plan to encompass lethality assessment, collateral effects and consequences. - Assess and add emerging threats to Missile Defense Agency lethality prediction models. - Support Defense Threat Reduction Agency (DTRA)/Missile Defense Agency efforts to provide consequence model predictive capabilities. - Maintain the System Engineering Plan ensuring synchronization of Element System Engineering Plans with the System document. - Countermeasures (CM)/Counter-countermeasures (CCM) red Team: <ul style="list-style-type: none"> -- Update independent adversary (Red Team) perspective on Phased Adaptive Approach (PAA) -- Complete independent adversary (Red Team) evaluation of three integrated countermeasure suites against PAA -- Complete independent adversary (Red Team) detailed evaluation of attack strategy against two selected PAA components <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Support Technical Evaluation Activities for Phased Adaptive Approach (PAA) Phase 4 Programs (Command and Control Battle Management and Communications (C2BMC), Aegis 5.1.X/SM-3 Blk IIB). - Conduct BMDS Performance Analysis and Trade Studies to support PAA Phase 4 program technical reviews (C2BMC, Aegis 5.1.X/ SM-3 Blk IIB). - Conduct BMDS Program of Record gap assessment and concept alternative assessment in support of budget development process. 				

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)						
<ul style="list-style-type: none"> - Initiate Development of Capability Planning Specifications to document functional and performance requirements for Future BMDS Programs. - Analyze architecture alternatives and new technologies, including new Directed Energy (laser) concepts. - Identify and evaluate architecture alternatives that are complementary to and interoperable with North Atlantic Treaty Organization (NATO) systems and theaters around the world and that improve the systems' performance. - Develop High Fidelity Lethality Data products to support Modeling and Simulation (M&S) Lethality Model Validation and accreditation. - Assess and add emerging threats to the Missile Defense Agency (MDA)'s lethality prediction models. - Produce and execute the BMDS Lethality Program Plan to encompass updates to lethality assessments, collateral effects and consequences. - Assess emerging threats and develop countermeasure mitigation strategies and roadmaps 				FY 2012	FY 2013	FY 2014
<p>Title: Requirements and Design</p> <p align="right">Articles:</p> <p>Description: The Requirements and Design effort develops the Ballistic Missile Defense (BMD) System-level requirements and specifications and drives the integration of the Ballistic Missile Defense System (BMDS); adjudicates Element level specifications; and underpins the BMDS, resulting in optimized capabilities for the Warfighter.</p> <p>FY 2012 Accomplishments: Conducted Engineering Reviews for MDA priorities, including Phased Adaptive Approach capabilities: <ul style="list-style-type: none"> - Conducted BMD System/Subsystem Design Reviews following Element Requirement Reviews to assess the maturity of the technical baseline at both the System and Subsystem levels, as well as the plans for integration, test and verification prior to execution. - Ensured requirements for Phased Adaptive Approach capabilities were adequately addressed. - Continued technical evaluation of emerging adversary characteristics to be included within future Adversary Data Packages. - Developed updates to the BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents to document integrated system build content approved for design, development and integration, including new Phased Adaptive Approach capabilities (e.g., Phase 3 and 4 documentation in the BMD System Description Document). - Conducted engineering analyses and performed trade studies for system design and development products, including the BMD System Specification and BMDS Interface Control Documents. - Provided updated requirements traceability and certification guidance and conducted detailed System/Element requirements reconciliation which resolved technical disconnects and ensured common System/Element requirements interpretation. </p> <p>FY 2013 Plans: Conduct Engineering Reviews for MDA Engineering, which include new Phased Adaptive Approach capabilities:</p>				30.653 0	26.485 0	24.486 0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Conduct BMD System/Subsystem Design Reviews following Element Requirement Reviews to assess the maturity of the technical baseline at both the System and Subsystem levels, as well as the plans for integration, test and verification prior to execution. - Ensure requirements for the new Phased Adaptive Approach capabilities are adequately addressed. - Continue technical evaluation of emerging adversary characteristics to be included within future Adversary Data Packages. - Develop updates to the BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents to document integrated system build content approved for design, development and integration, including new Phased Adaptive Approach capabilities (e.g., Phase III and IV documentation in the BMD System Description Document). - Conduct engineering analyses and perform trade studies for system design and development products, including the BMD System Specification and BMDS Interface Control Documents. - Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common System/Element requirements interpretation. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Conduct BMDS Engineering Reviews to address new capabilities: --Conduct BMD System/Subsystem Design Reviews following FY 2014 Element Requirement Reviews to assess maturity of the evolving technical baseline (System and Subsystem levels) and plans for integration, test and verification. -- Determine BMD system implications resulting from the Aegis BMD 5.1 Preliminary Design Review (PDR) and the Standard Missile-3 Block IIA (SM-3 Blk IIA) Critical Design Review (CDR). --Perform technical evaluations of emerging adversary characteristics to be included within future Adversary Data Packages. - Update BMDS Engineering Documentation to capture refinements to integrated system build content approved for design, development and integration, in accordance with BMDS Phased Implementation Plan: --BMD System Description Document (BMD SDD) and BMD System Specification (BMD SS) (i.e. incorporation of Robust IRBM Defense and Early Intercept/ ICBM Defense capabilities). --BMDS Interface Control Documents (ICDs). - Conduct engineering analyses and perform trade studies for system design and development products. - Continue to provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation. 				
Title: Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment		22.265	0.000	0.000
Articles:		0	0	0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: The IMTP effort develops Ballistic Missile Defense System (BMDS) test objectives and scenarios, and participates in test planning, execution, and post-test assessment.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Updated the Master Integration Plan (MIP) to reflect changes in planned delivery of BMDS content. - Provided engineering inputs for Integrated Master Test Plan (IMTP) updates using the Planning Allocation Matrix (PAM) tool to identify integration, test, assessment, and verification activities. - Collected BMDS Suitability Data through the Joint Reliability and Maintainability Engineering Team (JRMET) Data Scoring Boards - Provided pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System, which investigated BMDS test failures and identified solutions to enhance reliability. - Defined and executed required performance assessments to support incremental capability deliveries. - Provided monthly updates for BMDS verification status. - Conducted Site K, European Command (EUCOM) Command, Control, Battle Management, and Communications, and Site 512 Technical Capability Declaration reviews in lieu of the BMD System Critical Design Review. - Performed System-level analysis and interoperability analysis on BMDS test events listed in the IMTP. - Developed Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP. - Led Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP. - Developed, delivered, and briefed Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for Flight Test Terminal High Altitude Area Defense (FTT) 12, Flight Test Standard Missile 3 (FTM) 16 Event 2a, and FTM-18; supported Ground Test Focused (GTX) 04e, Ground Test Integrated (GTI) 04d part 2, Ground Test Distributed (GTD) 04d Part 2 and Part 3, GTI-04 Israel and Fast Eagle events. - Incorporated software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. - Continued to populate the MARS Analysis Database with current test data to support analysis and capability assessments. - Led performance analysis planning and data collection to support upcoming capability deliveries. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - FY 2013 plans are in budget project MT23 0603890C under accomplishment `IMTP Engineering, Integration, Verification and Assessment - SE&I` <p>FY 2014 Plans: N/A</p>				
Title: Systems Engineering, Engineering Analysis and Quick Response Team		43.328	6.923	6.401
Articles:		0	0	0

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

Description: The Systems Engineering, Engineering Analysis, and Quick Response Team task provides rapid response, high quality systems engineering analysis products to address external and internal Agency inquiries; produces complex weapon system performance data; develops responses to warfighter requests for information and analysis (RFI/RFA); and maintains the Effectiveness Metrics Standard to ensure consistent and accurate analyses.

FY 2012 Accomplishments:

- Conducted overall Systems Engineering and Integration program operations and management.
- Conducted system level performance analysis to support Ballistic Missile Defense System (BMDS) Architecture and Systems Engineering, including completion of the Phased Adaptive Approach (PAA) Phase 3/4 architectural trade studies and System and Element Requirements Reviews.
- Developed expected performance for each Phased Adaptive Approach phase as input to System architecture and design effort.
- Conducted technical analyses and provided engineering assessments of the Standard Missile 3 Block IIB.
- Updated the Element/Component Characterizations for Analysis (E/CCA) with latest performance data to ensure correct and consistent analytical results.
- Maintained the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.
- Provided engineering technical assessments in BMDS and Element programs in the critical areas designated by the Director for Engineering.
- Provided analysis and assessment support to the Combatant Commands to respond to over 50 Warfighter requests for analyses and requests for information.

FY 2013 Plans:

- Conduct overall Systems Engineering and Integration program operations and management.
- Conduct system level performance analysis to support BMDS Architecture and Systems Engineering.
- Develop expected performance for each PAA phase as input to System architecture and design effort.
- Conduct technical analyses and provide engineering assessments of the Standard Missile 3 Block IIB.
- Update the Element/Component Characterizations for Analysis (E/CCA) with latest performance data to improve capability.
- Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.
- Provide engineering technical assessments in BMDS and Element programs to examine critical areas as designated by the Director for Engineering.

FY 2012	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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
<p>- Provide analysis and assessment support to the Combatant Commands to respond to Warfighter requests for analyses and requests for information.</p> <p>FY 2014 Plans:</p> <p>- Conduct system level performance analysis to support ongoing BMDS Architecture and Systems Engineering efforts: -- Develop expected performance for PAA phases 3 and 4: Robust IRBM Defense and Early Intercept/ ICBM Defense. -- Conduct technical analyses and provide performance predictions for future BMDS components, such as Standard Missile 3 Block IIB. --Provide technical assessments in critical areas, such as technical performance measures.</p> <p>- Conduct analyses to support Aegis BMD 5.1 and Standard Missile-3 Block IIA (SM-3 Blk IIA) engineering reviews. - Respond to Warfighter, COCOM and Other requests for analyses and requests for information: provide analytical support for real-world events. - Provide updated Element/Component Characteristics for Analysis (E/CCA) with performance data changes to ensure consistent capability predictions and analyses. - Maintain the Effective Metric Standard (EMS) necessary for systematic presentation of alternatives to MDA senior leaders and the Combatant Commanders.</p>	FY 2012	FY 2013	FY 2014	
<p>Title: Threat Engineering</p> <p align="right">Articles:</p> <p>Description: The Threat Systems Engineering effort provides consistent definitions of adversary capabilities required for Ballistic Missile Defense System (BMDS) development and design, and maintains and updates the Agency-wide threat documentation to ensure the threat parameters used for BMD System performance predictions, analyses, design, verification, and assessment are correct and consistent.</p> <p>FY 2012 Accomplishments:</p> <p>- Maintained and updated the agency-wide common and consistent BMDS threat to provide data for future Ballistic Missile Defense System design, verification, and assessment. - Updated adversary missile capabilities and characterizations consistent with projected threat environment for the BMDS Phased Adaptive Approach (PAA).</p> <p>FY 2013 Plans:</p> <p>- Maintain and update the agency-wide common and consistent BMDS threat to provide data for future BMDS design, verification, and assessment.</p>	3.205 0	8.788 0	8.125 0	

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
- Update adversary missile capabilities and characterizations consistent with projected threat environment for the BMDS PAA.				
FY 2014 Plans: Develop and maintain the BMDS threat set to support BMDS design, verification, and assessment efforts. -- Update, verify, and validate threat models to include new threat representations, based on current intelligence reports. -- Produce new or update existing models to support development of ground test and digital simulation related scenario data, in accordance with the Integrated Master Test Plan (IMTP). -- Update the parametrically defined threat space. -- Complete development of a threat library, including systems with countermeasures. -- Validate threat representation of targets and support development of target requirements. -- Publish FY 2014 Adversary Data Package.				
Title: Anti-Tamper and Engineering Manufacturing Readiness Levels Development		FY 2012	FY 2013	FY 2014
Description: Anti-Tamper & Engineering Readiness Level Development develops anti-tamper approaches to enable international fielding of the Ballistic Missile Defense System (BMDS) by providing protection against reverse engineering of critical technologies, supporting coalition warfare, and extending the effective operational life of the BMDS. Engineering and Manufacturing Readiness Levels provide a means to evaluate the maturity of the BMDS elements, systems, and components by assessing the program or product against quantifiable criteria.		6.521	5.011	4.633
FY 2012 Accomplishments: Anti-Tamper: - Developed Anti-Tamper technologies to enable response and sensing capabilities for the BMDS. Engineering and Manufacturing Readiness Levels (EMRLs): - Applied Engineering and Manufacturing Readiness Levels to evaluate the engineering and manufacturing maturity of the BMDS elements, systems, and components, by assessing the program or product against quantifiable criteria. - Used Engineering and Manufacturing Readiness Levels to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements.		Articles: 0	0	0
FY 2013 Plans: Anti-Tamper: - Develop Anti-Tamper technologies to enable response and sensing capabilities for the BMDS. Engineering and Manufacturing Readiness Levels (EMRLs):				

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Apply Engineering and Manufacturing Readiness Levels as a means of evaluating the engineering and manufacturing maturity of the BMDS elements, systems, and components, by assessing the program or product against quantifiable criteria. - Use Engineering and Manufacturing Readiness Levels to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Assist BMDS Programs in developing Anti-Tamper strategy, to facilitate horizontal protection of BMDS enabling technologies and obtain concurrence of Department of Defense Anti-Tamper Executive Agent on Anti-Tamper Plans for BMDS Programs. - Continue to develop Anti-Tamper detection and response technologies to mitigate risk. - Apply Engineering and Manufacturing Readiness Levels (EMRLs) to evaluate engineering and manufacturing maturity of BMDS elements, systems, and components. - Assess and report readiness of MDA development efforts for transition to production. 				
<p>Title: Independent Technical Assessment</p> <p align="right">Articles:</p> <p>Description: Provide subject matter expertise to support high priority Ballistic Missile Defense System (BMDS) studies and reviews.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness. These assessments included Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations (e.g., SITE B). - Performed independent analyses and assessments for the MDA Director and MDA Director for Engineering including investment prioritization, system architecture studies, design reviews, and failure investigations. - Monitored the development and recommended improvements to the digital simulation enterprise based on an evaluation of the validity of component-, Element- and System-level models (and frameworks) and participation in Performance Assessment and other digital Modeling and Simulation events. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Conduct non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness. These assessments include Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations (e.g., SITE B). - Perform independent analyses and assessments for the MDA Director and MDA Director for Engineering including investment prioritization, system architecture studies, design reviews, and failure investigations. 		9.324 0	11.313 0	10.459 0

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>- Monitor the development and recommend improvements to the digital simulation enterprise based on an evaluation of the validity of component-, Element- and System-level models (and frameworks) and participation in Performance Assessment and other digital Modeling and Simulation events.</p> <p>FY 2014 Plans:</p> <p>- Perform independent analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations.</p> <p>- Conduct non-advocate assessments of the BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness, including assessments of Defense of the Homeland, Phased Adaptive Approach (PAA), Defense of Israel and Theater/Regional BMD configurations.</p> <p>- Monitor development and recommend improvements to the digital simulation enterprise based on an evaluation of the validity of Component, Element and System-level models (and frameworks) and participation in Performance Assessment and other digital Modeling and Simulation events.</p>				
<p>Title: Knowledge Centers</p> <p align="right">Articles:</p> <p>Description: Knowledge Centers serve as independent technical advisors to Ballistic Missile Defense System (BMDS) program offices in the C2BMC, Interceptor, Space, and Sensor areas to support development of technical approaches and improve reliability.</p> <p>FY 2012 Accomplishments:</p> <p>- Identified and mitigated BMDS element (Command, Control, Battle Management and Communications, Interceptor, Space, and Sensor) technical risks, and served as independent technical advisors to BMDS program offices.</p> <p>- Provided independent review of BMDS Knowledge Point closure, and participated in Failure Review Boards.</p> <p>- Provided program managers a mechanism to reach back to Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs) to support development of technical approaches to improve Command, Control, Battle Management and Communications (C2BMC), Interceptor, Space, and Sensor reliability.</p> <p>FY 2013 Plans:</p> <p>- Identify and mitigate BMDS element (C2BMC, Interceptor, Space, and Sensor) technical risks, and serve as independent technical advisors to BMDS program offices.</p> <p>- Provide independent review of BMDS Knowledge Point closure, and participate in Failure Review Boards as necessary.</p>		9.443 0	13.686 0	12.653 0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>- Provide program managers a mechanism to reach back to Federally Funded Research and Development Centers and University Affiliated Research Centers to support development of technical approaches to improve C2BMC, Interceptor, Space, and Sensor reliability.</p> <p>FY 2014 Plans:</p> <p>-Provide reach-back capability (Federally Funded Research and Development Centers and University Affiliated Research Centers) for Element program managers in the four key technical areas of C2BMC, Interceptors, Sensors, and Space:</p> <ul style="list-style-type: none"> -- Support BMDS and Element Independent Review Teams -- Identify and provide recommendations to mitigate technical risks: incorporate out-of-the-box concepts for Risk Mitigation and Reduction -- Provide independent technical analysis to support Knowledge Point definitions, system and element performance assessments, and risk management -- Provide subject matter expertise for Failure Review Boards and Failure Investigation teams -- Conduct assessments of emerging technologies, including focal plane array development, radiation-hardened components, and improvements to modeling and simulation 				
<p>Title: Risk Management</p> <p align="right">Articles:</p>		1.118 0	5.928 0	5.480 0
<p>Description: The Risk Management task identifies Ballistic Missile Defense System (BMDS) Element and Component technical risks, and tracks status and risk mitigation progress.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Reviewed, approved and configuration managed program risks across the BMDS. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Review, approve and configuration manage program risks across the BMDS. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Establish, manage, and configuration control the MDA Risk Management process. - Review and approve program element risks, on quarterly basis. - Convene and chair Risk Management Working Group. 				
<p>Title: Manufacturing and Producibility</p> <p align="right">Articles:</p>		0.000 0	0.000 0	4.500 0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD24: <i>System Engineering & Integration</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: This activity supports a system-level reliability, producibility and manufacturing team to reduce risk of test failures and performance shortcomings and drive reliability into system and component designs. Manufacturing and Producibility will also address materials, key component, and subsystem design and development to reduce cycle time, part count, and risk.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Update MDA reliability standards and procure reliability tools. - Assess operationally deployed equipment failures for trends and corrective action - Establish MDA industrial capability base assessments tied to manufacturing technology. - Assess and identify plans to reduce critical manufacturing materials and technologies and materials in missile production - Integrate reliability and production improvements with SBIR research and development. 				
<p>Title: Discrimination</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Develop and test software upgrades to C2BMC to aggregate information from multiple sensors to improve identification of lethal targets to fire control. - Develop and test TPY-2 sensor and interface upgrades required to pass sensor generated features to C2BMC needed for improving identification of lethal targets. 		0.000 0	0.000 0	16.600 0
Accomplishments/Planned Programs Subtotals		134.820	88.315	102.979

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
---	---	---

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>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 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

Remarks

D. Acquisition Strategy

In order to optimize the performance of the BMDS, MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. Products and Services will be acquired by competitive means to the extent that is possible and practical.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
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			
Future Concepts and Planning - Future Concepts - CSS	C/CPAF	CSC:AL	10.292	1.634		4.032	Oct 2012	3.728	Oct 2013	-		3.728	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	MIPR	SNL:CA	0.942	0.248		0.314	Oct 2012	0.290	Oct 2013	-		0.290	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 2	MIPR	LLNL:CA	1.104	0.279		0.354	Oct 2012	0.328	Oct 2013	-		0.328	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Industry	C/CPAF	Boeing:AL	11.403	5.256		5.481	Oct 2012	5.296	Oct 2013	-		5.296	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Planning CSS	C/CPFF	CSC:VA	0.000	1.546		0.000		0.000		-		0.000	0.000	1.546	0.000
Future Concepts and Planning - Future Concepts - Various 1	C/CPFF	Various:Various	0.794	0.000		0.000		0.000		-		0.000	0.000	0.794	0.000
Requirements and Design - Reqts & Design - CSS 1	C/CPFF	CSC:AL	9.979	6.174		6.510	Oct 2012	6.019	Oct 2013	-		6.019	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 2	C/CPFF	Cobham:CA	0.000	5.532		0.000		0.000		-		0.000	0.000	5.532	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Requirements and Design - Reqts & Design - FFRDC/UARC 1	MIPR	MIT/LL:MA	1.251	0.542		0.573	Oct 2012	0.530	Oct 2013	-		0.530	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 2	MIPR	LLNL:CA	0.190	0.099		0.103	Oct 2012	0.095	Oct 2013	-		0.095	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 3	MIPR	JHU-APL:VA	2.274	0.000		0.000		0.000		-		0.000	0.000	2.274	0.000
Requirements and Design - Reqts & Design - Industry	C/CPAF	Boeing:AL	31.095	17.274		18.210	Oct 2012	16.835	Oct 2013	-		16.835	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Other DoD	MIPR	NSWC:IN	2.784	1.032		1.089	Oct 2012	1.007	Oct 2013	-		1.007	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - CSS 1	C/CPFF	CSC:Various	13.601	2.000		0.000		0.000		-		0.000	0.000	15.601	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - CSS 2	C/CPFF	Cobham:CA	0.000	2.000		0.000		0.000		-		0.000	0.000	2.000	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - FFRDC Aerospace	MIPR	Aerospace:CA	0.405	0.000		0.000		0.000		-		0.000	0.000	0.405	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - FFRDC/UARC 1	FFRDC	JHU APL:VA	2.989	2.004		0.000		0.000		-		0.000	0.000	4.993	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - FFRDC/UARC 2	MIPR	MITRE:VA	0.664	0.445		0.000		0.000		-		0.000	0.000	1.109	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - FFRDC/UARC 3	MIPR	SNL:CA	0.765	0.445		0.000		0.000		-		0.000	0.000	1.210	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - IMTP - Industry	C/CPAF	Boeing:AL	16.979	15.371		0.000		0.000		-		0.000	0.000	32.350	0.000
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS	C/CPFF	CSC:AL	10.548	7.799		1.246	Oct 2012	1.152	Oct 2013	-		1.152	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/UARC 1	MIPR	Aerospace:VA	0.487	0.000		0.000		0.000		-		0.000	0.000	0.487	0.000
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/UARC 2	MIPR	MITRE:VA	2.888	2.600		0.414	Oct 2012	0.383	Oct 2013	-		0.383	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/UARC 3	FFRDC	JHU-APL:VA	0.767	0.000		0.000		0.000		-		0.000	0.000	0.767	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/ UARC 4	MIPR	MIT/LL:MA	0.434	0.000		0.000		0.000		-		0.000	0.000	0.434	0.000
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/ UARC 5	MIPR	LLNL:CA	0.293	0.000		0.000		0.000		-		0.000	0.000	0.293	0.000
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - Industry	C/CPAF	Boeing:AL	26.380	32.929		5.263	Oct 2012	4.866	Oct 2013	-		4.866	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - CSS 1	C/CPFF	Schafer:VA	3.389	0.000		0.000		0.000		-		0.000	0.000	3.389	0.000
Threat Engineering - Threat Engrg - CSS 2	C/CPFF	Torch Technologies:AL	5.747	1.219		3.344	Oct 2012	3.092	Oct 2013	-		3.092	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - FFRDC/ UARC 1	FFRDC	JHU APL:VA	1.565	0.226		0.617	Oct 2012	0.570	Oct 2013	-		0.570	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - FFRDC/ UARC 2	MIPR	MIT-LL:MA	4.411	0.974		2.671	Oct 2012	2.469	Oct 2013	-		2.469	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - FFRDC/ UARC 3	MIPR	SNL:CA	3.478	0.652		1.787	Oct 2012	1.652	Oct 2013	-		1.652	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - FFRDC/ UARC 4	MIPR	LLNL:CA	0.865	0.134		0.369	Oct 2012	0.342	Oct 2013	-		0.342	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - Industry	C/CPAF	Boeing:AL	2.783	0.000		0.000		0.000		-		0.000	0.000	2.783	0.000
Anti-Tamper and Engineering Manufacturing	MIPR	NSWC Crane:IN	2.674	2.280		1.751	Oct 2012	1.619	Oct 2013	-		1.619	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Readiness Levels Development - AT & EMRL - Anti-Tamper Support															
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - CSS/Travel	C/CPFF	DRC, Cobham:CA	2.092	0.798		0.614	Oct 2012	0.568	Oct 2013	-		0.568	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - Commonality and Standards	C/CPFF	DRAPER:MA	2.822	3.443		2.646	Oct 2012	2.446	Oct 2013	-		2.446	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/ UARC 1	MIPR	Aerospace:CA	8.605	2.331		2.829	Oct 2012	2.615	Oct 2013	-		2.615	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/ UARC 2	FFRDC	JHU APL:VA	3.746	1.305		1.583	Oct 2012	1.464	Oct 2013	-		1.464	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/ UARC 3	FFRDC	Draper :MA	1.446	0.000		0.000		0.000		-		0.000	0.000	1.446	0.000
Independent Technical Assessment - Independ Tech Assess - FFRDC/ UARC 4	MIPR	GTRI:GA	5.337	1.399		1.697	Oct 2012	1.569	Oct 2013	-		1.569	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/ UARC 5	MIPR	JPL:CA	0.931	0.000		0.000		0.000		-		0.000	0.000	0.931	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Independent Technical Assessment - Independ Tech Assess - FFRDC/UARC 6	MIPR	MIT/LL:MA	10.416	2.704		3.281	Oct 2012	3.033	Oct 2013	-		3.033	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/UARC 7	MIPR	MITRE:VA	6.120	1.585		1.923	Oct 2012	1.778	Oct 2013	-		1.778	Continuing	Continuing	Continuing
Independent Technical Assessment - Independ Tech Assess - FFRDC/UARC 8	MIPR	ORNL:TN	0.746	0.000		0.000		0.000		-		0.000	0.000	0.746	0.000
Independent Technical Assessment - Independ Tech Assess - FFRDC/UARC 9	MIPR	LLNL:CA	0.240	0.000		0.000		0.000		-		0.000	0.000	0.240	0.000
Knowledge Centers - KC - FFRDC/UARC 1	MIPR	Aerospace:CA	1.912	2.365		3.428	Oct 2012	3.169	Oct 2013	-		3.169	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 10	MIPR	SEI:PA	0.064	0.079		0.116	Oct 2012	0.107	Oct 2013	-		0.107	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 2	MIPR	MIT/LL:MA	1.050	1.298		1.882	Oct 2012	1.740	Oct 2013	-		1.740	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 3	FFRDC	MITRE:VA	0.812	1.004		1.453	Oct 2012	1.343	Oct 2013	-		1.343	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 4	FFRDC	JHU/APL:VA	0.967	1.195		1.731	Oct 2012	1.600	Oct 2013	-		1.600	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 5	FFRDC	SDL:MA	0.096	0.119		0.172	Oct 2012	0.159	Oct 2013	-		0.159	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 6	MIPR	Draper:MA	0.755	0.933		1.350	Oct 2012	1.248	Oct 2013	-		1.248	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 7	MIPR	GTRI:GA	1.009	1.247		1.809	Oct 2012	1.672	Oct 2013	-		1.672	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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			
Knowledge Centers - KC - FFRDC/UARC 8	MIPR	JPL:CA	0.490	0.606		0.878	Oct 2012	0.812	Oct 2013	-		0.812	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 9	MIPR	ORNL:TN	0.382	0.472		0.684	Oct 2012	0.632	Oct 2013	-		0.632	Continuing	Continuing	Continuing
Knowledge Centers - KC - OGA	MIPR	AMRDEC:AL	0.025	0.031		0.047	Oct 2012	0.045	Oct 2013	-		0.045	Continuing	Continuing	Continuing
Knowledge Centers - KC - Other	MIPR	Northrop Grumman:VA	0.076	0.094		0.136	Oct 2012	0.126	Oct 2013	-		0.126	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - CSS	C/CPFF	MEI:AL	0.000	0.656		3.490	Oct 2012	3.225	Oct 2013	-		3.225	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - FFRDC/UARC	MIPR	MITRE:VA	0.000	0.392		2.068	Oct 2012	1.912	Oct 2013	-		1.912	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Other 1	MIPR	DAU:VA	0.000	0.026		0.139	Oct 2012	0.129	Oct 2013	-		0.129	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Other 2	MIPR	MDA/DOI:VA	0.000	0.044		0.231	Oct 2012	0.214	Oct 2013	-		0.214	Continuing	Continuing	Continuing
Manufacturing and Producibility - CSS 1	C/CPFF	tbd:tbd	0.000	0.000		0.000		4.500		-		4.500	Continuing	Continuing	Continuing
Discrimination - Support	MIPR	MDA:AL	0.000	0.000		0.000		16.600		-		16.600	Continuing	Continuing	Continuing
Subtotal			224.359	134.820		88.315		102.979		0.000		102.979			

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			
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - T&E	C/CPAF	Boeing:VA	12.057	0.000		0.000		0.000		-		0.000	0.000	12.057	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
---	---	---

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			
IMTP - BMDS Level Testing															
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - T&E IMTP - BMDS Level Testing 1	C/CPFF	CSC:VA	2.462	0.000		0.000		0.000		-		0.000	0.000	2.462	0.000
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - T&E IMTP - BMDS Level Testing 2	FFRDC	JHU APL:VA	1.731	0.000		0.000		0.000		-		0.000	0.000	1.731	0.000
Threat Engineering - T&E Threat Engrg - CSS 1	C/CPFF	CSC:VA	1.974	0.000		0.000		0.000		-		0.000	0.000	1.974	0.000
Threat Engineering - T&E Threat Engrg - CSS 2	C/CPFF	Cobham:CA	1.385	0.000		0.000		0.000		-		0.000	0.000	1.385	0.000
Threat Engineering - T&E Threat Engrg - Industry	C/CPAF	Boeing:VA	4.585	0.000		0.000		0.000		-		0.000	0.000	4.585	0.000
Subtotal			24.194	0.000		0.000		0.000		0.000		0.000	0.000	24.194	0.000

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

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 0603890C: <i>BMD Enabling Programs</i>			PROJECT MD24: <i>System Engineering & Integration</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	248.553	134.820		88.315		102.979	0.000	102.979			

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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
Update to Ballistic Missile Defense System Interface Control Document (SICD) FY 2013							△																					
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2012	▲																											
Aegis BMD 5.1 System Requirements Review #2 (SRR#2)	▲																											
Phased Adaptive Approach Quarterly Status Review #3	▲																											
Aegis Ashore Critical Design Review	▲																											
Ballistic Missile Defense System Specification (BMD SS) - FY 2011/12		▲																										
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2012		▲																										
Integrated Master Assessment Plan (IMAP) / Update - FY 2012		▲																										
Phased Adaptive Approach Quarterly Status Review #4		▲																										
Aegis BMD 5.1 System Design Review (SDR) #1		▲																										
Element Preliminary Design Reviews - FY 2012		▲																										
Adversary Data Package (ADP) - FY 2012		▲																										
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2012		▲																										
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2012			▲																									
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #1			▲																									
BMD System Requirements Review (SRR) Part 1			▲																									
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012-C2BMC			▲																									
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2012				▲																								
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2012				▲																								
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #2				▲																								

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012			▲																									
Provide Independent Assessments to MDA - FY 2012			▲																									
Master Integration Plan (MIP) - FY 2012			▲																									
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2013				△																								
Adversary Data Package (ADP) - FY 2013				△																								
System/Subsystem Requirements Review - FY 2013				△																								
Aegis BMD 5.1 System Design Review (SDR) #2				△																								
Phased Adaptive Approach Quarterly Status Review #7				△																								
BMD System Requirements Review (SRR) Part 2				△																								
Precision Tracking Space System First Article Preliminary Design Review				☆																								
Ballistic Missile Defense System Specification (BMD SS) - FY 2013					△																							
Integrated Master Assessment Plan (IMAP) / Update - FY 2013					△																							
Phased Adaptive Approach Quarterly Status Review #8					△																							
System Engineering Plan (SEP) Update - FY 2013					△																							
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2013					△																							
Element Preliminary Design Reviews - FY 2013					△																							
Aegis BMD 5.1 System Design Review (SDR) #3						△																						
Ballistic Missile Defense System Design Review - FY 2013						△																						
Provide Independent Assessments to MDA - FY 2013							△																					
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2013								△																				
Master Integration Plan (MIP) - FY 2013								△																				
Update Phased Adaptive Approach Capability Planning Specifications (CPS) - FY 2013								△																				

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2013								▲																				
Aegis BMD 5.1 Preliminary Design Review (PDR)								▲																				
Adversary Data Package (ADP) - FY 2014								▲																				
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014								▲																				
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2014										▲																		
Element Preliminary Design Reviews - FY 2014										▲																		
Ballistic Missile Defense System Design Review - FY 2014												▲																
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014												▲																
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014														▲														
Provide Independent Assessments to MDA - FY 2014															▲													
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014															▲													
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2015																▲												
System/Subsystem Requirements Review - FY 2015																▲												
Adversary Data Package (ADP) - FY 2015																▲												
Ballistic Missile Defense System Specification (BMD SS) - FY 2015																	▲											
Element Preliminary Design Reviews - FY 2015																	▲											
System Engineering Plan (SEP) Update - FY 2015																	▲											
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2015																	▲											
Ballistic Missile Defense System Design Review - FY 2015																			▲									
Provide Independent Assessments to MDA - FY 2015																											▲	
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2015																											▲	

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015														△														
Adversary Data Package (ADP) - FY 2016															△													
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016															△													
Element Preliminary Design Reviews - FY 2016																△												
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2016																△												
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016																	△											
Ballistic Missile Defense System Design Review - FY 2016																	△											
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016																		△										
Provide Independent Assessments to MDA - FY 2016																			△									
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016																			△									
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2017																				△								
Adversary Data Package (ADP) - FY 2017																					△							
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2017																						△						
Ballistic Missile Defense System Specification (BMD SS) - FY 2017																							△					
Element Preliminary Design Reviews - FY 2017																								△				
System Engineering Plan (SEP) Update - FY 2017																								△				
Ballistic Missile Defense System Design Review - FY 2017																									△			
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2017																										△		
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017																											△	
Provide Independent Assessments to MDA - FY 2017																												△
Adversary Data Package (ADP) - FY 2018																												△

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</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				
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018																													△			
Element Preliminary Design Reviews - FY 2018																													△			
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2018																													△			
Ballistic Missile Defense System Design Review - FY 2018																														△		
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018																														△		
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018																															△	
Provide Independent Assessments to MDA - FY 2018																															△	
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Update to Ballistic Missile Defense System Interface Control Document (SICD) FY 2013	3	2013	3	2013
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2012	1	2012	1	2012
Aegis BMD 5.1 System Requirements Review #2 (SRR#2)	1	2012	1	2012
Phased Adaptive Approach Quarterly Status Review #3	1	2012	1	2012
Aegis Ashore Critical Design Review	1	2012	1	2012
Ballistic Missile Defense System Specification (BMD SS) - FY 2011/12	2	2012	2	2012
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2012	2	2012	2	2012
Integrated Master Assessment Plan (IMAP) / Update - FY 2012	2	2012	2	2012
Phased Adaptive Approach Quarterly Status Review #4	2	2012	2	2012
Aegis BMD 5.1 System Design Review (SDR) #1	2	2012	2	2012
Element Preliminary Design Reviews - FY 2012	2	2012	2	2012
Adversary Data Package (ADP) - FY 2012	2	2012	2	2012
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2012	2	2012	2	2012
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2012	3	2012	3	2012
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #1	3	2012	3	2012
BMD System Requirements Review (SRR) Part 1	3	2012	3	2012
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012-C2BMC	3	2012	3	2012
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2012	4	2012	4	2012
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2012	4	2012	4	2012
Phased Adaptive Approach Ballistic Missile Defense System Requirements Review #2	4	2012	4	2012
Phased Adaptive Approach (PAA) Capability Planning Specifications (CPS) - FY 2012	4	2012	4	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
Provide Independent Assessments to MDA - FY 2012	4	2012	4	2012
Master Integration Plan (MIP) - FY 2012	4	2012	4	2012
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2013	1	2013	1	2013
Adversary Data Package (ADP) - FY 2013	1	2013	1	2013
System/Subsystem Requirements Review - FY 2013	1	2013	1	2013
Aegis BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
Phased Adaptive Approach Quarterly Status Review #7	1	2013	1	2013
BMD System Requirements Review (SRR) Part 2	1	2013	1	2013
Precision Tracking Space System First Article Preliminary Design Review	1	2013	1	2013
Ballistic Missile Defense System Specification (BMD SS) - FY 2013	2	2013	2	2013
Integrated Master Assessment Plan (IMAP) / Update - FY 2013	2	2013	2	2013
Phased Adaptive Approach Quarterly Status Review #8	2	2013	2	2013
System Engineering Plan (SEP) Update - FY 2013	2	2013	2	2013
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2013	2	2013	2	2013
Element Preliminary Design Reviews - FY 2013	2	2013	2	2013
Aegis BMD 5.1 System Design Review (SDR) #3	3	2013	3	2013
Ballistic Missile Defense System Design Review - FY 2013	3	2013	3	2013
Provide Independent Assessments to MDA - FY 2013	4	2013	4	2013
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2013	4	2013	4	2013
Master Integration Plan (MIP) - FY 2013	4	2013	4	2013
Update Phased Adaptive Approach Capability Planning Specifications (CPS) - FY 2013	4	2013	4	2013
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2013	4	2013	4	2013
Aegis BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
Adversary Data Package (ADP) - FY 2014	1	2014	1	2014
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014	1	2014	1	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2014	2	2014	2	2014
Element Preliminary Design Reviews - FY 2014	2	2014	2	2014
Ballistic Missile Defense System Design Review - FY 2014	3	2014	3	2014
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014	3	2014	3	2014
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014	4	2014	4	2014
Provide Independent Assessments to MDA - FY 2014	4	2014	4	2014
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014	4	2014	4	2014
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2015	1	2015	1	2015
System/Subsystem Requirements Review - FY 2015	1	2015	1	2015
Adversary Data Package (ADP) - FY 2015	1	2015	1	2015
Ballistic Missile Defense System Specification (BMD SS) - FY 2015	2	2015	2	2015
Element Preliminary Design Reviews - FY 2015	2	2015	2	2015
System Engineering Plan (SEP) Update - FY 2015	2	2015	2	2015
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2015	2	2015	2	2015
Ballistic Missile Defense System Design Review - FY 2015	3	2015	3	2015
Provide Independent Assessments to MDA - FY 2015	4	2015	4	2015
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2015	4	2015	4	2015
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015	4	2015	4	2015
Adversary Data Package (ADP) - FY 2016	1	2016	1	2016
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016	1	2016	1	2016
Element Preliminary Design Reviews - FY 2016	2	2016	2	2016
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2016	2	2016	2	2016
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016	3	2016	3	2016
Ballistic Missile Defense System Design Review - FY 2016	3	2016	3	2016
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016	4	2016	4	2016

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD24: <i>System Engineering & Integration</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
Provide Independent Assessments to MDA - FY 2016	4	2016	4	2016
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016	4	2016	4	2016
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2017	1	2017	1	2017
Adversary Data Package (ADP) - FY 2017	1	2017	1	2017
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2017	2	2017	2	2017
Ballistic Missile Defense System Specification (BMD SS) - FY 2017	2	2017	2	2017
Element Preliminary Design Reviews - FY 2017	2	2017	2	2017
System Engineering Plan (SEP) Update - FY 2017	2	2017	2	2017
Ballistic Missile Defense System Design Review - FY 2017	3	2017	3	2017
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2017	4	2017	4	2017
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017	4	2017	4	2017
Provide Independent Assessments to MDA - FY 2017	4	2017	4	2017
Adversary Data Package (ADP) - FY 2018	1	2018	1	2018
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018	1	2018	1	2018
Element Preliminary Design Reviews - FY 2018	2	2018	2	2018
Element/Component Characterization for Analysis (E/CCA) - 2Q - FY 2018	2	2018	2	2018
Ballistic Missile Defense System Design Review - FY 2018	3	2018	3	2018
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018	3	2018	3	2018
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018	4	2018	4	2018
Provide Independent Assessments to MDA - FY 2018	4	2018	4	2018
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2018	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</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
MT23: <i>Enabling - Test</i>	-	0.000	32.386	42.850	-	42.850	65.609	41.407	37.078	35.661	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

In the Enabling program's test project, Systems Engineering and Integration drives Ballistic Missile Defense System (BMDS) planning, execution, and post-test assessment, providing critical data to prove that missile defense works as designed.

System Engineering and Integration (SE&I) Major Program Goals for the Integrated Master Test Plan (IMTP):

- Verify and Assess BMDS performance and capabilities through testing
- Develop BMDS Performance Assessment parameters
- Identify the Critical Engagement Conditions and data required to develop the test campaigns that will demonstrate regional defense performance, and verify and assess the capability of each Phased Adaptive Approach (PAA)
- Define the test objectives necessary to anchor BMDS-level models and simulations, enable independent verification and validation, and identify System issues occurring in ground and flight tests
- Identify BMDS capabilities and limitations
- Develop, manage and use BMDS level Modeling and Simulation (M&S) to verify BMDS performance in system operational regions outside the live fire testing regions.

During test integration, verification, and model validation, engineering studies and analyses enable the allocation of test requirements to individual test events, design of test architectures, definition of target requirements, and generation of appropriate scenarios for ground and flight tests, in order to collect the required model validation data. With the support of the Director of Operational Test and Evaluation (DOT&E), SE&I works with the Services' Operational Test Agencies (OTA) to incorporate operational test requirements under development to ensure the incremental capability being transferred to the Warfighter will be operationally effective, suitable, and survivable. SE&I leads test failure review boards, identifies shortfalls in data collection, and reallocates objectives to future test events until all identified model validation data is collected. Reliability, Availability and Maintainability data is collected through the Joint Reliability and Maintainability Engineering Team (JRMET) and quarterly data scoring boards with the Elements, to Warfighter commanders and increases the confidence levels in the predicted performance of the BMDS. BMDS Test Incident Reports document abnormal system behavior that occurs during System-level tests and alert MDA to issues with test article reliability. The Failure Reporting, Analysis, and Corrective Action System (FRACAS) provides a framework to investigate System test failures and anomalies and to identify solutions that will ultimately improve BMDS performance and reliability.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>

BMDS Level Testing: SE&I identifies and coordinates test objectives that define the basic test design development and ensure BMDS requirements are being met by the BMD System under test. Systems Engineering plays a key role in Ballistic Missile Defense test design and development by defining, allocating to test events, and tracking Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), as documented in the Integrated Master Test Plan (IMTP). The CECs and EMEs include key test points allocated to test events to ensure that the design of the BMDS test includes data collection to show proper system operation; they also provide validation, verification, and assessment data for the digital models and simulations used to predict BMDS performance. These models and simulations, along with the rigorous test and verification process, will be used to demonstrate BMDS performance in areas where no live-fire-testing is performed and provide direct support to the fielding decisions and BMDS deployed operations.

System Pre-Mission Testing and Post-Flight Reconstruction: SE&I supports System Pre-Mission predictions for system level flight tests using the test framework set up with the BMDS configuration for a particular flight test. This provides confidence readiness for Flight Test execution by predicting BMDS performance and exercising element interfaces. This work also ensures the flight test will collect the required data (including Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs)) and the data management plan will support System and Element Post-Flight Reconstruction (SPFR) objectives. System Post-Flight Reconstruction uses a hardware-in-the-loop (HWIL) and/or Digital Modeling and Simulation Environment to replicate the day of flight for the BMDS configuration, including the actual environmental conditions and target dynamics observed in the test. The results of this process increase confidence in the models and simulations by anchoring the results to the real world event, with emphasis on the CECs and EMEs. System and Element Post-Flight Reconstructions are used for validation (anchoring) of BMDS and Element models and simulations.

Collection opportunities for CECs and EMEs span a number of years, based on planned test events. To date, MDA has completed collection opportunities across the PAA phases:

- PAA Phase 1: 44% Completed in FY 2012, 51% projected for completion in FY 2013, 63% projected for completion in FY 2014
- PAA Phase 2: 35% Completed in FY 2012, 42% projected for completion in FY 2013, 57% projected for completion in FY 2014
- PAA Phases 3 and 4: 40% Completed in FY 2012, 46% projected for completion in FY 2013, 58% projected for completion in FY 2014
- Homeland Defense and Other: 31% Completed in FY 2012, 40% projected for completion in FY 2013, 54% projected for completion in FY 2014

Modeling & Simulation (M&S) Integrated Master Test Plan (IMTP) Mission Support: The distinct capabilities of MDA's M&S systems and products are ingrained throughout the BMDS and provide the Warfighter and Operational Test Agency (OTA) with an evaluation capability for individual components as well as overall M&S system-of-systems. MDA validates and accredits system-level models and simulations by anchoring them to real-world events to support accurate and comprehensive assessments of the BMDS. Future M&S development activities will focus on the model and simulation frameworks, BMDS Element models, as well as core truth modeling (e.g., threat, phenomenology, lethality, and environment). The success of the missile defense program is enabled by quality M&S systems and products that help prove BMDS technologies work. In particular, MDA M&S System and Product testing is based on an integrated, comprehensive, and phased test program as outlined in MDA's IMTP. Within the construct of the IMTP, MDA Element unique M&S systems, subsystems, and components are tested as part of their respective development and integration, a necessary precursor to conducting BMD System-level M&S testing (e.g., integrated ground test, performance/technical assessment

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

venues). Resources for the planning, design, execution and management of this testing are provided in accordance with the BMDS Test Policy, as listed in the most current version of the IMTP.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE/I</p> <p align="right">Articles:</p> <p>Description: The SE&I IMTP effort develops Ballistic Missile Defense System (BMDS) test objectives and scenarios, and participates in test planning, execution, and post-test assessment.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Update the Master Integration Plan (MIP) to incorporate changes in planned delivery of BMDS content. - Provide engineering inputs for Integrated Master Test Plan (IMTP) updates using the Planning Allocation Matrix (PAM) tool to identify integration, test, assessment, and verification activities. - Collect BMDS Suitability Data through the Joint Reliability and Maintainability Engineering Team (JRMET) Data Scoring Boards. - Provide pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System, which investigates BMDS test failures and identifies solutions that enhance reliability. - Define and execute required performance assessments to support incremental capability deliveries. - Provide monthly updates for BMDS verification status. - Conduct BMDS Critical Design Review to document requirements used for performance assessments of incremental deliveries. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Provide engineering inputs for IMTP updates: identify integration, test, assessment, and verification activities. -Collect BMDS reliability and maintainability data and document requirements for successful completion of test events. -Provide pre- and post-test support for the Failure Reporting, Analysis, and Corrective Action System (FRACAS), which investigates BMDS test failures and anomalies and identifies solutions that enhance system performance and reliability. -Define, execute, and document results of required performance assessments supporting incremental capability deliveries. -Update the Integrated Master Assessment Plan (IMAP) semi-annually to address changes in planned delivery of Ballistic Missile Defense System content as reflected in the Ballistic Missile Defense System Description Document (BMD SDD), the Ballistic Missile Defense System Specification (BMD SS), Master Integration Plan, and detailed design and development documentation. Update also reflects changes to BMDS deployment and utilization. -Produce FY 2014 Systems Engineering Assessment Report (SEAR) to incorporate FY 2013 test and assessment results. -Complete Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) collection opportunities: <ul style="list-style-type: none"> -- PAA Phase 1: Complete 12% of CEC collection opportunities (total 63%) 	<p>0.000</p> <p>0</p>	<p>18.136</p> <p>0</p>	<p>31.809</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MT23: <i>Enabling - Test</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -- PAA Phase 2: Complete 15% of CEC collection opportunities (total 57%) -- PAA Phases 3 and 4: Complete 12% of CEC collection opportunities (total 58%) -- Homeland Defense and Other: Complete 14% of CEC collection opportunities (total 54%) 				
<p>Title: Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations</p> <p align="right">Articles:</p> <p>Description: The M&S Integrated Master Test Plan (IMTP) effort integrates Single Stimulation Framework (SSF), Digital Simulation Architecture (DSA) and Objective Simulation Framework (OSF) products with MDA and Non-MDA element models, core truth components and Hardware in the Loop (HWIL) assets to form Ballistic Missile Defense System (BMDS) architectures for the execution of IMTP events.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Event Support Operations - Collaborate with Elements, Test Community, System Engineering, and Operational Test Agencies (OTAs) to ensure Modeling and Simulation (M&S) for each event meet intended uses and objectives, and have proper Verification, Validation, and Accreditation (VV&A) documentation and evidence, to include benchmarking/anchoring pedigree - System Level Education, Validation and Accreditation (VV&A) - Planned/On-going: Develop integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments, Assured Response and Global Defender Exercises in accordance with events planned per the current approved Integrated Master Test Plan (IMTP) - Provide Annual Accreditation Assessment, Report and Briefing with Recommendations for critical M&S Improvements to align with end of year BMDS Operational Test Agency (OTA) Accreditation reporting and MDA President's Budget (PB) investment strategy efforts. - Planned/On-going: Plan and specify system post-flight reconstructions events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level VV&A associated with Digital and Hardware-in-the-loop (HWIL) System Post Flight Reconstructions, in accordance with activities prioritized, funded and resourced per the current approved Integrated Master Test Plan (IMTP) 	<p>0.000</p> <p>0</p>	<p>14.250</p> <p>0</p>	<p>11.041</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Planned/On-going: Work closely with Elements, Test Community, System Engineering, and Operational Test Agency (OTA) to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree - Planned/On-going: Conduct system-level verification and validation of threat trajectory and signature, of end-to-end environmental implementation (consistent and correct), of modeled communications and architecture (behave properly) and evaluate that M&S interoperability is adequately addressed - Planned/On-going: Update or develop M&S Directives, Policies, Standards and Methodology Guides to support advancements in VV&A process and methodology to maximize improvement to M&S Accreditation. - Planned/On-going: Conduct annual review of BMDS Element VV&A programs and provide recommendations for improvements in M&S capabilities and planned Verification and Validation (V&V) activities to accelerate and optimize M&S Accreditation - Planned/On-going: Lead BMDS VV&A working group (VVAWG) and Verification, Validation and Accreditation Control Board (VVACB) to improve VV&A operations and ultimately improve BMDS M&S performance and accreditation - Planned/On-going: Ensure that individual BMDS elements and components properly VV&A their own models - Planned/On-going: Develop and present M&S objectives, event requirements, Accreditation status and strategic VV&A plans as part of MDA BMDS Integrated Master Test Plan (IMTP) development. - Planned/On-going: Develop and/or update additional chapters/volumes of the Integrated Master VV&A Plan (IMVP) to align long-range VV&A planning with MDA long-range planned events, assessments and fielding decisions. - Develop threat trajectories and integrated threat packages to support Modeling and Simulation (M&S) frameworks and execute MDA Integrated Master Test Plan (IMTP) events to include Performance Assessments (PAs), Ground Tests, Operational Tests, Flight Tests and Combatant Command (COCOM) Exercises - Complete integration of National Air and Space Intelligence Center (NASIC) missile model capability into Threat Modeling Simulation System (TMSS) to produce intelligence-credible threat products for IMTP events - Support accreditation for Kinetic Impact Debris Distribution (KIDD) as post-intercept debris modeling tool - Support accreditation for Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS) as engagement lethality modeling tool for Patriot PAC-3, THAAD, and GM - Plan and produce re-entry vehicle (RV) and kill vehicle (KV) model products using M&S lethality tools, KIDD and PEELS, for Flight Test, Ground Test, Performance Assessments/Technical Assessments (PA/TAs), wargames, and exercises - Event Integration/Support Operations - Product Level Verification, Validation & Accreditation (VV&A) - Conduct requirements management for product VV&A (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) - Conduct Independent Verification & Validation (IV&V) on Core Lethality Models (PEELS, KIDD) product modifications 			

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Develop missile model and integrated threat package Verification & Validation (V&V) reports to support Integrated Master Test Plan (IMTP) events FY 2014 Plans: -Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses. -Develop and establish Hardware-in-the-loop (HWIL) M&S Integration Test Cases for Ground and Flight Tests (Pre-Post Mission). -Conduct M&S HWIL Integration Bench Mark testing for Ground and Flight Tests (Pre-Post Mission), by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. -Develop and present M&S objectives, event requirements, Accreditation status and strategic VV&A plans as part of MDA BMDS Integrated Master Test Plan (IMTP) development. -Conduct specified system post-flight reconstructions and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation; perform all system-level Verification, Validation & Accreditation (VV&A) associated with these events as reflected in the IMTP. FY 2014 decrease is consistent with the activities defined in the IMTP.			
Accomplishments/Planned Programs Subtotals	0.000	32.386	42.850

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
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 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

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

D. Acquisition Strategy

In order to optimize the performance of the BMDS, MDA leverages the nation's engineering Centers of Excellence at government agencies and Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. Products and Services will be acquired by competitive means to the extent that is possible and practical.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</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			
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			
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE/I - IMTP SE&I - CSS	C/CPFF	CSC:AL	0.000	0.000		3.258	Oct 2012	5.714	Oct 2013	-		5.714	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE/I - IMTP SE&I - FFRDC/ UARC 1	FFRDC	JHU APL:VA	0.000	0.000		1.632		2.862	Oct 2013	-		2.862	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE/I - IMTP SE&I - FFRDC/ UARC 2	MIPR	MITRE:VA	0.000	0.000		0.362	Oct 2012	0.635	Oct 2013	-		0.635	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE/I - IMTP SE&I - FFRDC/ UARC 3	MIPR	SNL:CA	0.000	0.000		0.363	Oct 2012	0.637	Oct 2013	-		0.637	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification	C/CPAF	Boeing:AL	0.000	0.000		12.521	Oct 2012	21.961	Oct 2013	-		21.961	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</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			
and Assessment - SE/I - IMTP SE&I - Industry															
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - Ground Test VV&A	C/CPAF	Northrop Grumman:CO	0.000	0.000		3.040	Oct 2012	2.355	Oct 2013	-		2.355	Continuing	Continuing	Continuing
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - M&S Accreditation	C/CPAF	Northrop Grumman:CO	0.000	0.000		3.426	Oct 2012	2.655	Oct 2013	-		2.655	Continuing	Continuing	Continuing
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - Performance Assessment VV&A	C/CPAF	Northrop Grumman:CO	0.000	0.000		7.784	Oct 2012	6.031	Oct 2013	-		6.031	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		32.386		42.850		0.000		42.850			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

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	0.000	0.000	32.386	42.850	0.000	42.850			

Remarks
N/A

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

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

	FY 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
System Engineering Assessment Report (SEAR) - FY 2013				△																								
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2013					△																							
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2013							△																					
Master Integration Plan (MIP) - FY 2013							△																					
System Engineering Assessment Report (SEAR) - FY 2014								△																				
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2014								△																				
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2014									△																			
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2014										△																		
Master Integration Plan (MIP) - FY 2014											△																	
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2014											△																	
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2015												△																
System Engineering Assessment Report (SEAR) - FY 2015													△															
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2015														△														
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2015															△													
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2015																△												
Master Integration Plan (MIP) - FY 2015																	△											
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2016																		△										
System Engineering Assessment Report (SEAR) - FY 2016																			△									
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2016																					△							

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>

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

	FY 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
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2016																			△									
Master Integration Plan (MIP) - FY 2016																			△									
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2016																			△									
System Engineering Assessment Report (SEAR) - FY 2017																				△								
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2017																				△								
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2017																					△							
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2017																						△						
Master Integration Plan (MIP) - FY 2017																							△					
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2017																							△					
System Engineering Assessment Report (SEAR) - FY 2018																								△				
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2018																								△				
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2018																									△			
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2018																										△		
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2018																												△
Master Integration Plan (MIP) - FY 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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
System Engineering Assessment Report (SEAR) - FY 2013	1	2013	1	2013
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2013	2	2013	2	2013
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2013	4	2013	4	2013
Master Integration Plan (MIP) - FY 2013	4	2013	4	2013
System Engineering Assessment Report (SEAR) - FY 2014	1	2014	1	2014
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2014	1	2014	1	2014
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2014	2	2014	2	2014
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2014	3	2014	3	2014
Master Integration Plan (MIP) - FY 2014	4	2014	4	2014
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2014	4	2014	4	2014
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2015	1	2015	1	2015
System Engineering Assessment Report (SEAR) - FY 2015	1	2015	1	2015
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2015	2	2015	2	2015
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2015	3	2015	3	2015
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2015	4	2015	4	2015
Master Integration Plan (MIP) - FY 2015	4	2015	4	2015
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2016	1	2016	1	2016
System Engineering Assessment Report (SEAR) - FY 2016	1	2016	1	2016
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2016	2	2016	2	2016
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2016	3	2016	3	2016
Master Integration Plan (MIP) - FY 2016	4	2016	4	2016
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2016	4	2016	4	2016

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MT23: <i>Enabling - Test</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
System Engineering Assessment Report (SEAR) - FY 2017	1	2017	1	2017
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2017	1	2017	1	2017
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2017	2	2017	2	2017
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2017	3	2017	3	2017
Master Integration Plan (MIP) - FY 2017	4	2017	4	2017
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2017	4	2017	4	2017
System Engineering Assessment Report (SEAR) - FY 2018	1	2018	1	2018
Update to Integrated Master Assessment Plan (IMAP) - 1Q - FY 2018	1	2018	1	2018
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2018	2	2018	2	2018
Update to Integrated Master Assessment Plan (IMAP) - 3Q - FY 2018	3	2018	3	2018
Update to Integrated Master Test Plan (IMTP) - 4Q - FY 2018	4	2018	4	2018
Master Integration Plan (MIP) - FY 2018	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</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
MD28: <i>Intelligence & Security</i>	61.494	18.937	36.886	32.161	-	32.161	32.194	34.323	33.939	35.542	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

Intelligence and Security Program Major Program Goals:

- Ensure the Intelligence Community understands and fulfills the Missile Defense Agency's (MDA's) current and future prioritized intelligence requirements in an accurate and timely manner; advocate Ballistic Missile Defense System (BMDS) test support collection requirements with the Intelligence Community; and ensure that MDA's intelligence needs and finished intelligence requirements are understood while ensuring the Intelligence Community is involved in technical interchange meetings.
- Continue the federated approach to supporting MDA by leveraging available National and Department of Defense (DoD) Counterintelligence resources to ensure counterintelligence products and services are fully integrated into all Research, Development, Test & Evaluation (RDT&E) programs and activities to protect classified information and critical technologies and to support and protect MDA and BMDS personnel, facilities, information and activities from criminal, terrorist and Foreign Intelligence and Security Service targeting/threats.
- Consistently and comprehensively define cyber security systems engineering requirements for Continental United States (CONUS) and non-CONUS based BMDS assets. Define cyber security systems engineering and cyber security infrastructure intelligence requirements to focus Intelligence Community collection, analysis and production to target MDA/BMDS cyber vulnerabilities, and incorporate cyber security engineering requirements into the systems engineering process.

The Security and Intelligence Project captures four specific areas:

- 1) Intelligence
- 2) Counterintelligence
- 3) Cyber Security Engineering
- 4) Research, Development Acquisition (RDA) Security

Collectively, these efforts provide critical information regarding threat ballistic missile system capabilities (via intelligence); protection of personnel, activities, and technology from espionage and terrorism through active and passive activities (via counterintelligence); and BMDS system vulnerabilities (via Cyber Security Engineering).

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
<p>1) Intelligence provides a clearing house for MDA’s requirements for the Intelligence Community collection, analysis and production. Intelligence also provides for quality control and dissemination of Intelligence Community products for all properly cleared Government and contractor personnel and provides feedback to the Intelligence Community on subsequent questions, issues and other requirements resulting from Intelligence Community reporting. The intelligence process begins when the Intelligence Community collects and analyzes data on foreign threat missiles. Resulting threats and threat changes are provided to the BMDS System Engineer, who uses the threats to develop and change the BMDS. This information reduces risk and improves system performance. It enables MDA Program Managers to achieve a sufficiently accurate understanding of the threat environment to respond to relevant capabilities of immediate importance, make informed decisions, and invest limited resources on countering the most significant aspects of potential adversary capabilities. Other aspects of Intelligence are designed to gain access to, and leverage unique Intelligence Community developed, owned and operated capabilities for the benefit and advocacy of the Missile Defense Community. Numerous Intelligence Community capabilities are highly classified and require both access and expertise to exploit.</p> <p>2) Counterintelligence undertakes defensive Counterintelligence (CI) activities as part of an integrated DoD/National effort to detect and neutralize foreign intelligence collection efforts, espionage and terrorist activities directed against MDA personnel, information, facilities, and activities or against U.S. National Security.</p> <p>Pursuant to DoD Directive O-5240.02 (Counterintelligence) and other DoD CI policy issuances:</p> <ul style="list-style-type: none"> -- Conduct CI Investigations: Conduct initial inquiries into reported or suspected clandestine relationships between MDA personnel and agents of a foreign power or international terrorist organizations -- Perform CI Collection: Systematically collect intelligence information via liaison relationships with U.S. and host-nation intelligence, CI and law enforcement organizations and debriefings of MDA foreign travelers -- Perform CI Analysis and Production: Produce assessments, analytical reports, threat advisories and other products to keep MDA program elements and senior leadership informed on foreign intelligence, international terrorism and foreign entity cyber threat -- Provide CI Functional Services: Conduct defensive CI activities in support of MDA SAP and RDA programs, test events, and fielding/deployment activities to protect Critical Program Information and sensitive technologies from foreign intelligence collection activities and international terrorism threats. <p>3) Cyber Security Engineering Program assists the Ballistic Missile Defense System (BMDS) to manage and deploy Cyber Security engineering requirements and solutions to fulfill DoD and Warfighter mandates, while enhancing the robustness and resilience of the cyber infrastructure. Develop and coordinate near-term and long-term engineering changes to the BMDS that advances the confidentiality, integrity, and availability and counter cyber threats posed by our adversaries. To fulfill this role, the BMDS Cyber Security Engineering program works in concert with Information Assurance Engineers, Intelligence and Counterintelligence to obtain a comprehensive picture of the overall threat and cyber security engineering at all levels of the BMDS, then influence the design by 1) identifying and developing Core Standards and Requirements to implement Defense-in-Depth within planned development cycles (Builds); 2) providing oversight, coordination and management of key technical requirements development, and policy-mandated responsibilities; 3) providing contract acquisition support to BMDS Elements ensuring cyber security is addressed throughout the procurement process and; 4) interfacing with the Intelligence Community to define cyber security threats relevant to the BMDS. To fulfill stated mission requirements, the program interfaces with relevant Cyber Security Engineering experts to assess requirements, documentation and cyber security system design.</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

4) Research, Development Acquisition (RDA) Security manages the MDA Information, Industrial, Operations Security, and Defense Critical Infrastructure Protection programs to protect acquisition, test, development, and fielding of BMDS capabilities. RDA Security conducts security reviews for all Congressional, General Accountability Office (GAO), budget, Freedom of Information Act (FOIA), Public Release actions; develops and coordinates Security Classification Guides (SCGs) and resolves questions regarding security classification; manages MDA Industrial Security program to develop Contract Security Classification Specifications (DD-254s) for all MDA contracts and to resolve Foreign Ownership, Control, and Influence (FOCI) issues; and conducts Information Security (INFOSEC) program reviews for all MDA offices; and conducts security inquiries as required. RDA Security also supports program offices in assessing acquisition programs to identify critical program information (CPI), recommend security measures to protect CPI; and develop Program Protection Plans. Systems Security provides planning support for BMDS deployments by coordinating site security infrastructure requirements for deploying BMDS assets with the Combatant Commanders (COCOMs) and Services and developing and coordinating site security designs to protect critical BMDS assets. RDA Security conducts the MDA Declassification Program in compliance with Executive Order 13526 (Classified National Security Information), requiring mandatory review of 25 year-old missile defense documents to ensure classified and sensitive but unclassified information is not inadvertently released into the public domain.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Intelligence</p> <p style="text-align: right;">Articles:</p> <p>Description: The Intelligence program provides expertise to develop intelligence products on threat ballistic missile system capabilities, and leverages unique intelligence community-developed, owned and operated capabilities for the benefit and advocacy of the missile defense community.</p> <p>FY 2012 Accomplishments: The Intelligence Requirements Office:</p> <ul style="list-style-type: none"> - Continued to be the single intelligence requirements integration office within MDA and its designated intermediary with the Intelligence Community and maintained a consistent dialog with the Intelligence Community to ensure they have a focused, prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive Ballistic Missile Defense System (BMDS). - Continued to manage the intelligence collection requirements and engaged the Intelligence Community to ensure MDA requirements were documented, validated, collected, and understood. Intelligence tasks included planning intelligence collections support for missile defense tests and documenting requirements in Intelligence Community management systems, and maintaining and updating Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events. - Continued to maintain an ongoing, persistent, focused dialog with all members of the Intelligence Community to ensure MDA intelligence requirements were viewed in proper context, received the proper priority level, and were explicitly understood by the Intelligence Community. 	<p>11.636</p> <p>0</p>	<p>13.507</p> <p>0</p>	<p>11.722</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

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

	FY 2012	FY 2013	FY 2014
<p>- Continued to provide all levels of builders of missile defense intelligence requirements with the most up to-date and accurate intelligence, which required a detailed understanding of the BMDS developer`s and senior leadership`s particular requirements.</p> <p>- Continued to provide an encyclopedic, all-source, and all encompassing knowledge base of the foreign ballistic missile threat including development, enhancement, and population of the Secret and Top Secret/Sensitive Compartmented Information Missile Threat Portals with Intelligence Community produced finished intelligence documents. These portals have the most up-to-date current intelligence to provide immediate situational awareness, technical intelligence data to be used by the BMDS Program Elements and System Engineers, and direct linkages to the Intelligence Community to support the MDA Warfighter Support Center.</p> <p>- Fully characterized all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS. The MDA Director for Engineering used this intelligence to build the Adversary Data Package used by all Program Elements and MDA Test as the ballistic missile threat document utilized to build and test the BMDS. The Director, MDA has offered and authorized this two year resource augmentation to National Air and Space Intelligence Center (NASIC) as bridge funding while USAF/NASIC realign resources within the MIP to accommodate these requirements.</p> <p>- Proposed, developed, and executed a cyber study. The study continued the demonstration of the effectiveness of using models and simulation to support all-source scientific and technical intelligence (S&TI) analysis of the impact of cyber threats to a U.S. tactical military network. The terms model and simulation will be interchangeable and include both hardware and software. The details of the aspects of the specific network to be addressed shall be provided by the Government.</p> <p>FY 2013 Plans: FY 2013 Intelligence Planned Program:</p> <p>The Intelligence Requirements Office will:</p> <p>- Continue to be the single intelligence requirements integration office within MDA and its designated intermediary with the Intelligence Community and maintain a consistent dialog with the Intelligence Community to ensure they have a focused, prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive BMDS.</p> <p>- Continue to manage the intelligence collection requirements and engage the Intelligence Community to ensure MDA requirements are documented, validated, collected, and understood. Intelligence tasks will include planning intelligence collections support for missile defense tests and documenting requirements in Intelligence Community management systems, and maintaining and updating Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events.</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD28: <i>Intelligence & Security</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>- Continue to maintain an ongoing, persistent, focused dialog with all members of the Intelligence Community to ensure MDA intelligence requirements are viewed in proper context, receive the proper priority level, and are explicitly understood by the Intelligence Community.</p> <p>- Continue to provide all levels of builders of missile defense intelligence requirements with the most up to-date and accurate intelligence, which requires a detailed understanding of the BMDS developer`s and senior leadership`s particular requirements.</p> <p>- Continue to provide an encyclopedic, all-source, and all encompassing knowledge base of the foreign ballistic missile threat including development, enhancement, and population of the Secret and Top Secret/Sensitive Compartmented Information Missile Threat Portals with Intelligence Community produced finish intelligence documents. These portals have the most up-to-date current intelligence to provide immediate situational awareness, technical intelligence data to be used by the BMDS Program Elements and System Engineers, and direct linkages to the Intelligence Community to support the MDA Warfighter Support Center.</p> <p>- Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS. The MDA Director for Engineering uses this intelligence to build the Adversary Data Package used by all Program Elements and MDA Test as the ballistic missile threat document utilized to build and test the BMDS. The Director, MDA has offered and authorized this two year resource augmentation to National Air and Space Intelligence Center (NASIC) as bridge funding while USAF/NASIC realign resources within the MIP to accommodate these requirements.</p> <p>FY 2014 Plans:</p> <p>-Serve as designated intelligence broker between MDA and the Intelligence Community:</p> <p>-- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community</p> <p>-- Maintain a focused dialog with all members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements</p> <p>-- Manage intelligence collection requirements, including specific requirements supporting individual ground and flight test events</p> <p>-- Maintain Measurement and Signature Intelligence (MASINT), Geospatial Intelligence (GEOINT), and Signal Intelligence (SIGINT) requirements on advances in foreign ballistic missile technology and for all MDA events.</p> <p>-Provide up-to-date and accurate intelligence to Missile Defense community.</p> <p>-Maintain and update MDA`s encyclopedic, all-source, and all encompassing knowledge base of foreign ballistic missile threats, including development, enhancement, and population of the Missile Threat Portals with Intelligence Community produced documents at the appropriate security classification levels.</p> <p>-Fully characterize all ballistic missile threat systems from high priority countries for use by the MDA Systems Engineer, Program Managers, and Director for Test to perform modeling, simulation, and testing of the BMDS in FY 2014.</p>				
Title: Counterintelligence		4.503	6.203	5.423

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p align="right"><i>Articles:</i></p> <p>Description: The Counterintelligence effort protects personnel, activities, information and technologies from espionage and terrorism through defensive operations and activities.</p> <p>FY 2012 Accomplishments: FY 2012 Counterintelligence Planned Program:</p> <ul style="list-style-type: none"> - Served as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations fostering collaborative partnerships to identify, prevent or mitigate foreign intelligence collection activities targeting MDA personnel, facilities and activities. These partnerships prevented the loss or compromise of critical Research, Development and Acquisition (RDA) program information or sensitive Ballistic Missile Defense System (BMDS) technologies during flight tests and other RDA activities. - Deployed organic counterintelligence teams to conduct defensive counterintelligence activities in support of deployed BMDS components and other fielding initiatives under the Phased Adaptive Approach (PAA). - Procured and fielded updated technical surveillance countermeasures equipment and specialized voice and data communications analysis systems used to detect, neutralize or mitigate sophisticated foreign intelligence technical and cyber collection tradecraft and technologies used to target MDA personnel, facilities, flight test activities, classified Ballistic Missile Defense conferences and BMDS fielding and deployment activities worldwide. - Supported all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA / BMDS information, technologies, personnel, facilities and activities. <p>FY 2013 Plans: FY 2013 Counterintelligence Planned Program:</p> <ul style="list-style-type: none"> - The Counterintelligence Division will continue to serve as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations. To this end, the Counterintelligence Division will continue to foster collaborative partnerships targeting foreign intelligence collection activities directed against MDA personnel, facilities and activities to prevent the loss or compromise of critical program information or critical BMDS technologies. - The Counterintelligence Division will deploy organic counterintelligence teams to conduct defensive counterintelligence activities in support of BMDS fielding initiatives under the Phased Adaptive Approach and Foreign Military Sales Programs. - The Counterintelligence Division will continue to procure and field updated secure voice and data communications systems in support of MDA flight tests, conferences and BMDS deployment initiatives under the Phased Adaptive Approach and Foreign Military Sales Program. 	0	0	0
--	---	---	---

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>- The Counterintelligence Division will continue to support all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p> <p>FY 2014 Plans:</p> <p>- Serve as MDA Office of Primary Responsibility with Federal, State and Local Law Enforcement and Counterintelligence (CI) Organizations for reporting and resolution of matters or incidents involving MDA personnel, information and technologies.</p> <p>-- Engage National, Combatant Command and DoD CI resources to share and obtain threat information impacting MDA personnel, facilities, information, technologies, programs and activities, worldwide.</p> <p>-- Deploy organic CI and technical teams to in support of BMDS fielding and deployment activities under the European Phased Adaptive Approach and other initiatives under Foreign Military Sales Programs.</p> <p>- Conduct CI research and provide timely, relevant and accurate threat products to keep MDA program elements and senior leadership informed of criminal, terrorist and foreign intelligence threats to MDA personnel, facilities, programs, information, and activities.</p> <p>- Execute lifecycle replacement of outdated technical surveillance countermeasures and cyber forensics gear to employ the latest technologies during conferences, flight tests and other classified activities to detect, deter and prevent the loss or compromise of classified or sensitive but unclassified information to sophisticated foreign adversary collection activities.</p> <p>- Provide on-site CI and technical support for all MDA flight tests to detect, deter, or neutralize criminal, terrorist and foreign intelligence collection threats targeting MDA and BMDS technologies, personnel, facilities and activities.</p> <p>- Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks.</p>			
---	--	--	--

Title: Cyber Security Engineering Program	2.798	4.201	3.673
Articles:	0	0	0

Description: Cyber Security Engineering protects the BMDS from existing and emerging cyber threats and achieves mission assurance and resiliency against a cyber attack.

FY 2012 Accomplishments:
FY 2012 Ballistic Missile Defense System (BMDS) Cyber Security Engineering Planned Program:

- Continued to fulfill DASD Cyber identify and Information Assurance Strategy and DoD Instruction 8580.
- Developed and coordinated near-term and long-term engineering changes to the BMDS that advance the confidentiality, integrity, and availability and counter cyber threats posed by our adversaries.
- Continued to define Cyber Security Engineering requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively, and definitively.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Continued to assess the Cyber security architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` Cyber Security Engineering Concepts to support technical assessments and Cyber Security design solutions and implementation recommendations. - Developed and documented technical requirements and interfaces to execute an Integrated Cyber Security Engineering Net-centric Architectural Concept. - Continued to enhance the Cyber Security posture of the BMDS by delivering expert, responsive, Cyber Security Engineering products and services supporting the Program Managers to meet BMDS and Cyber Security Engineering needs and requirements. - Continued to assist in the sustainment of an acceptable Cyber Engineering security posture for the MDA Director, through various initiatives at each stage of the program`s lifecycle. <p>FY 2013 Plans: FY 2013 Ballistic Missile Defense System (BMDS) Cyber Security Engineering Planned Program:</p> <ul style="list-style-type: none"> - Continue to fulfill DoD Instruction 8500.2 and 8510.01 policy-mandated roles of the Information Assurance Manager and Information Assurance Officer for the overarching Ballistic Missile Defense System (BMDS). - Continue to define Information Assurance/Computer Network Defense (IA/CND) requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively and definitively. - Continue to assess the IA/CND security architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` IA/CND Architectural Concepts to support technical assessments and IA/CND design solutions and implementation recommendations. - Develop and document technical requirements and interfaces to execute an Integrated IA/CND Net-centric Architectural Concept. - Continue to enhance the information assurance posture of the BMDS by delivering expert, responsive, relevant IA/CND products and services supporting the Program Managers to meet BMDS and IA/CND needs and requirements. - Continue to assist in the sustainment of an acceptable IA/CND security posture for the MDA Director, through various initiatives at each stage of the program`s lifecycle. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Implement the Deputy Assistant Secretary of Defense (DASD) for Cyber, Identity, and Information Assurance (CIIA) Strategy by achieving Cyberspace resiliency (being flexible, adaptable, and successful in the face of cyber degradation, loss or attack) predicated on three conditions: (1) cyber assets are trustworthy, (2) Global Information Grid (GIG)-dependent missions are prepared, and (3) GIG operations have the means to prevail. - Ensure Cyber Security is integrated into the Acquisition Process in accordance with DoD Instruction 8580. 			
--	--	--	--

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Develop and coordinate near-term and long-term engineering changes to the BMDS that advances the resiliency to cyber threats posed by our adversaries. - Define Cyber Security Engineering requirements in the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively, and definitively. Develop the requirements and specifications for building-in cyber security up front to incremental BMDS Hardware and Software builds. These requirements are then allocated out to the Elements by the BMDS systems engineering effort. Update the BMDS Core Standards to include new Cyber-related specifications specified by the agency, the COCOMS, the DOD, and the Federal Government. - Assess the Cyber security architecture to address gaps/disconnects, to enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` Cyber Security Systems Engineering Concepts to support technical assessments and Cyber Security design solutions and implementation recommendations impacted by the change in requirements. Support updates to the BMDS Design Description, System Security Concept (SSC), and other planning documents to ensure cyber issues are fully considered through the BMDS and element programs. - Develop and document technical requirements and interfaces to execute an Integrated Cyber Security Engineering Net-centric Architectural Concept. - Implement the National Security Agency (NSA) Community Gold Standard to enhance the Cyber Security posture of the BMDS by delivering expert, responsive, Cyber Security Systems Engineering products and services supporting the Program Managers to meet BMDS and Cyber Security Systems Engineering needs and requirements for Enhanced Homeland Defense and Enhanced MRBM Defense. - Develop and provide a Cyber Security protection process to ensure Critical Information Assurance (IA) capabilities are engineered into the BMDS design to mitigate current and emerging cyber threats. 			
---	--	--	--

Title: Research, Development Acquisition (RDA) Security	0.000	12.975	11.343
Articles:	0	0	0

Description: Research, Development and Acquisition (RDA) Security protects Ballistic Missile Defense System (BMDS) information, Critical Program Information, technologies, and deploying systems, and develops/coordinates Security Classification Guides. Prior to FY 2013, the RDA Security activity was reported in budget project MD40, Program-Wide Support.

FY 2012 Accomplishments:
N/A

FY 2013 Plans:

- The RDA Security Information Safeguards will continue to perform all reviews supporting Agency public release, security classification, as well as required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR). Additionally, RDA Security will perform Information Security staff assistance reviews and assessments of 90 MDA programs and will coordinate required security incident reviews to identify and fix security deficiencies impacting Agency operations.

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD28: <i>Intelligence & Security</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>The Industrial Security program will continue to provide security oversight for the Agency's classified contracts, drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts.</p> <p>- The RDA Security Systems Protection branch will continue to provide security support to Phased Adaptive Approach (PAA), as well as other directed BMDS systems deployments.</p> <p>- RDA Security will focus program protection planning on the continuing assessment of candidate critical program information (CPI) for Advanced Technology programs, notably including Standard Missile-3 (SM-3) Block IIB and High Power Directed Energy, as well as Small Business Innovative Research (SBIRS) projects to identify technologies that will transition into MDA programs. Work will also continue with Counterintelligence on Supply Chain Risk Management (SCRM) issues that could degrade the performance of BMDS systems.</p> <p>- RDA Security personnel will continue to provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado and with the Test Directorate to ensure 100% security protection coverage of the BMDS mission operations and test assets. During this reporting period, funding for the maintenance and update of the Argus electronic security system for the Missile Defense Integrated Operations Center will be transferred from Program Wide Support into the Intelligence & Security budget.</p> <p>- The Declassification Program requirements will continue to expand in FY 2013, as the Agency conducts declassification reviews of historical documents 25 years old and older in accordance with Executive Order 13526, Classified National Security Information. The MDA production target is projected to be in excess of 5.7 million page equivalent historical records. To support this increasing requirement, MDA will fund a project for high volume scanning of volumes of legacy hard copy documents into digital format that can then be processed, using intelligent software, to assist in identifying missile defense equities. The application of scanning and automated analytic tools will permit the Agency to meet annual declassification requirements.</p> <p>FY 2014 Plans:</p> <p>- Perform all reviews supporting Agency public release, security classification, as well as required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR) to ensure sensitive BMDS information is not inadvertently released into the public domain.</p> <p>- Perform Information Security staff assistance reviews and assessments of 90 MDA programs and coordinate required security incident reviews to identify and fix security deficiencies impacting Agency operations: support continuing awareness and emphasis of security measures to protect critical BMDS technological information.</p>				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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide security oversight for the Agency`s classified contracts by drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts. Oversight helps ensure appropriate protections for BMDS sensitive information are applied within the supporting industrial base. - Provide security support to Phased Adaptive Approach (PAA) and other directed BMDS systems deployments, ensuring effective physical protection is provided to extremely low density/high demand emerging warfighter capability. - Focus program protection planning on the continuing assessment of candidate critical program information (CPI) for Advanced Technology programs and reassessment of other BMDS programs affected by technical baseline changes: ensure critical technologies embedded in Missile Defense systems are not vulnerable to compromise. - Execute an effective Supply Chain Risk Management (SCRM) program to prevent unmitigated risks from degrading the performance of components and systems across the BMDS supply chain. - Provide dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado to ensure 100% security protection coverage of the BMDS mission operations and test assets based in those regions. - Provide a combination of digitized material, automated search tools, and Declassification Specialists to identify sensitive BMDS material that qualifies for exemption from automatic declassification based on age. Declassification reviews identify equities that warrant continued protection to preserve the technological advantage of the BMDS. 			
Accomplishments/Planned Programs Subtotals	18.937	36.886	32.161

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

Remarks

D. Acquisition Strategy
In support of acquiring an effective BMDS capability, this project directs various executing agents and leverages expertise in the intelligence community, counterintelligence community, and information assurance community, including the Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry. The executing agents utilize various contracting strategies in a flexible manner to maximize their contribution to the BMDS. Products and Services will be acquired by competitive means to the extent that is possible and practical.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</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			
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			
Intelligence - Analysis and Support	C/FFP	Lockheed Martin:Gaithersburg, VA	20.923	4.994		7.599	May 2013	6.557	May 2014	-		6.557	Continuing	Continuing	Continuing
Intelligence - Intelligence Applications	MIPR	SMDC:Huntsville, AL	4.315	2.155		3.259	Oct 2012	2.849	Oct 2013	-		2.849	Continuing	Continuing	Continuing
Intelligence - Intelligence Collections	MIPR	NASIC:Wright-Patterson AFB, OH	0.000	1.300		2.649	Oct 2012	2.316	Oct 2013	-		2.316	Continuing	Continuing	Continuing
Intelligence - Intelligence Watch	SS/CPAF	MDIOC-Northrop Grumman:Colorado Springs CO	11.186	2.487		0.000		0.000		-		0.000	0.000	13.673	0.000
Counterintelligence - CI Analysis and Support	C/CPFF	QinetiQ Inc:Fairfax, VA	16.905	4.503		0.000		0.000		-		0.000	0.000	21.408	0.000
Counterintelligence - CI Analysis and Support 1	MIPR	Various:Various	0.600	0.000		0.000		0.000		-		0.000	0.000	0.600	0.000
Counterintelligence - CI Analysis and Support 2	C/CPFF	Booz Allen Hamilton:McLean, VA	0.000	0.000		6.203	Apr 2013	5.423	Apr 2014	-		5.423	Continuing	Continuing	Continuing
Cyber Security Engineering Program - Cyber Threat	SS/FFP	Booz Allen Hamilton:McLean, VA	7.116	2.798		0.000		0.000		-		0.000	0.000	9.914	0.000
Cyber Security Engineering Program - Cyber Threat 1	SS/FFP	Mantech:Falls Church, VA	0.000	0.000		4.201	Jul 2013	3.673	Jul 2014	-		3.673	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD28: <i>Intelligence & Security</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			
Research, Development Acquisition (RDA) Security - RDA Analysis & Support	MIPR	Mantech:Falls Church, VA	0.000	0.000		5.998	Oct 2012	5.243	Oct 2013	-		5.243	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security - RDA Support	MIPR	Booz-Allen Hamilton:McLean, VA	0.000	0.000		6.977	Oct 2012	6.100	Oct 2013	-		6.100	Continuing	Continuing	Continuing
Subtotal			61.045	18.237		36.886		32.161		0.000		32.161			

Remarks
MDIOC - Missile Defense Integration & Operations Center; SMDC - Space & Missiles Development Center; NASIC - National Air and Space Intelligence Center

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

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			
Intelligence - Intelligence Project Management MD28	SS/FFP	Various:Various	0.449	0.700		0.000		0.000		-		0.000	0.000	1.149	0.000
Subtotal			0.449	0.700		0.000		0.000		0.000		0.000	0.000	1.149	0.000

Remarks
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 0603890C: <i>BMD Enabling Programs</i>			PROJECT MD28: <i>Intelligence & Security</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	61.494	18.937	36.886	32.161	0.000	32.161				

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-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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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
MD30: <i>BMD Information Management Systems</i>	106.012	120.313	107.744	92.488	-	92.488	97.019	94.893	105.198	91.517	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

Beginning in FY2014, Cyber Operations content will move to Program Element 0603890C Enabling, Budget Project MC30. Cyber Operations content is reported in Program Element 0603890C Enabling Programs, Budget Project MD30 prior to FY2014.

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 (BMD) Information Management Systems Project funds the Information Technology (IT), Cyber Security, Information Assurance (IA), and telecommunications infrastructure of the Agency. Information management systems are critical to the day-to-day functions of MDA personnel to communicate (classified and unclassified) with each other, Congress, senior DoD and other U.S. government agency personnel, Combatant Commanders, North Atlantic Treaty Organization (NATO) partners, and other industry partners. Communication among these organizations facilitates the MDA mission of developing and fielding an integrated Ballistic Missile Defense System (BMDS) to defend the United States, our deployed forces, allies, and friends against all ranges of enemy ballistic missiles in all phases of flight. MDA information management systems capabilities support rigorous missile defense testing and facilitates. The development of technologies to guard against future missile threat growth. Communications are vital for missile defense to continue a viable homeland defense against rogue threats and to provide the integration required to defend deployed forces, allies, and friends against theater threats. The management systems consist of MDA secure communication networks, IT systems, data centers, operations and monitoring centers which are vital to support the strategic mission of the Agency and necessary to meet disaster recovery and continuity of operations requirements. This infrastructure is required to sustain access to the Secret Internet Protocol Router Network (SIPRNET), Non secure Internet Protocol Router Network (NIPRNET), MDA classified and unclassified networks, classified and unclassified video teleconferencing services, test and business knowledge data centers, the Defense Research Engineering Network (DREN). These mission critical functions provide for the efficient operation and safeguarding of all agency information in locations supporting MDA around the world.

This project funds IT, mission critical functions, providing for the efficient operation and safeguarding of Agency information in compliance with Department of Defense (DoD) policies and in keeping with the President's declaration on 29 May 2009, that "cyber threat is one of the most serious economic and national security challenges we face as a nation".

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
<p>Project MD30 was realigned into the following seven inter-agency mission critical IT services and the associated plans for FY 2013 and 2014 to align with the Federal Information Technology Shared Services Strategy.</p> <ol style="list-style-type: none"> 1. End User Support This service strategy supports end user office productivity needs and covers the licensing and sustainment of desktops, laptops, and associated hardware and software. The support also covers printing and copy services, file and directory services, user authentication, and help desk support for break-fix actions. 2. Unified Communications This service strategy supports leased communications (classified and unclassified wide area networks, metropolitan area networks, and local area networks), telecommunications (local and long distance telephone services and secure and non secure mobile and desktop telephony devices), management, engineering, systems integration, operations, maintenance, and technical support services. Unified Communications also includes sustainment of Video Teleconferencing (VTC) hardware/software, VTC and conference room scheduler application, BlackBerrys and wireless services, instant messaging and collaboration, secure and non-secure telephone equipment, private branch exchange switches maintenance, unclassified desktop/laptop integrated audio/video collaboration services, secure Telepresence suites and secure mobile cell phones. 3. Information Assurance/Computer Network Defense (IA/CND) This service strategy provides protection of classified and unclassified infrastructure necessary for planning and coordination of the Director’s RDT&E, operations and maintenance, and upgrade initiatives for the BMDS. This service strategy provides compliance with Federal Information Security Management Act (FISMA) and includes implementation of the DoD Information Assurance Certification and Accreditation Process (DIACAP) to manage risk, conduct security assessments, and monitor compliance with applicable security controls. This vital program of the BMDS and MDA Enterprise consists of cyber security, information assurance, computer network defense, network situational awareness, and certification and accreditation activities to comply with the Global Information Grid Information Assurance Strategic Plan and Goals, DoD information assurance directives, instructions and guidelines. 4. Business Automation Services In accordance with the Clinger Cohen Act and Defense Business Systems Investment Management Process, the Business Automation Services strategy provides for the licensing and sustainment of DoD business enterprise architecture approved applications. This function ensures that MDA business applications meet the interoperable defense business solutions requirements for federal accounting, financial management, and reporting requirements 5. Portal and Data Services The Portal and Data Services strategy enables knowledge and information sharing across MDA. This service includes operations and maintenance of the Unclassified and Classified MDA Knowledge Online portals and associated storage. This function is also responsible for records management solutions, and privacy and civil liberties compliance and reporting. 6. Network and Infrastructure Services 		

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
---	---	---

This strategy includes operations and sustainment of MDA classified and unclassified networks and data centers. This service ensures DoD compliant delivery, oversight and performance monitoring of IT systems that enable, secures IT systems access, server and storage capacity management, and communications security (COMSEC) status. This service also supports Disaster Recovery and Continuity of Operations (DR/COOP) rehearsals and network hardware break/fix and end-of-life replacement.

7. Information Technology (IT) Planning and Solutions

This service strategy provides IT project planning and management, life-cycle asset management, enterprise architecture planning and documentation, architecture change and configuration management, Office of Management and Budget (OMB) and DoD IT compliance tracking and reporting.

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

	FY 2012	FY 2013	FY 2014
Title: End User Support	0.000	32.958	32.039
Articles:	0	0	0
Description: Provides for operations, maintenance and helpdesk support to each MDA IT user desktop capability.			
FY 2012 Accomplishments: N/A			
FY 2013 Plans:			
-Sustain End User core service support 18 hours a day, 6 days a week for administrative and business information systems for approximately 8,000 MDA unclassified users and approximately 3,500 classified users			
-Monitor networks for user compliance and DoD policies, and report incidents			
-Maintain Printing and Copy Services (386 multi-functional device printers and 12 print servers)			
-Sustain email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks)			
-Sustain file services (8 file servers and 4 storage area networks)			
-Maintain Directory Services (24 Active Directory and domain controller servers)			
-Maintain Authentication services (Public Key Infrastructure/Common Area Card)			
-Maintain current hardware and software licenses for IT operational systems			
-Maintain an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter			
- Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys)			
-Fund MDA Chief Information Office (CIO) civilian salaries			
FY 2014 Plans: Continue efforts as listed under FY 2013 plans for End User Support.			

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
The change between FY 2013 and FY 2014 is due to a reduction in software license costs.				
Title: Unified Communications		0.000	16.573	15.769
		Articles: 0	0	0
Description: Provides for implementation, operations and maintenance of VTC, wireless and telephony services.				
FY 2012 Accomplishments: N/A				
FY 2013 Plans: -Fund recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices) -Operate, monitor, and sustain recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan -Operate, monitor, and sustain recurring classified and unclassified wireless services -Operate, monitor, and sustain recurring operations for agency wide video teleconference rooms and equipment -Provide and implement engineering solutions for all unified communication services -Sustain unclassified desktop instant messaging and collaboration capabilities to MDA users -Fund Chief Information Office (CIO) civilian salaries				
FY 2014 Plans: Continue efforts as listed under FY 2013 plans for Unified Communications. The change between FY 2013 and FY 2014 is the result of continued efficiencies in reducing leased circuits costs and through the implementation of a fee-for-service business model for IT services within the Agency.				
Title: Information Assurance/Computer Network Defense		0.000	11.314	0.000
		Articles: 0	0	0
Description: Provides for the certification of IT networks and systems, monitoring and computer emergency response services, and Cyber Security workforce training. Beginning in FY2014, Cyber Operations content will move to Program Element 0603890C Enabling, Budget Project MC30. Cyber Operations content is reported in Program Element 0603890C Enabling Programs, Budget Project MD30 prior to FY2014.				
FY 2012 Accomplishments: N/A				
FY 2013 Plans:				

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Monitor and defend MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year -Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command -Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies -Implement Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches -Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget -Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies -Revise and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget -Fund recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems -Manage the Information Assurance Workforce Improvement Program to certify Information Assurance professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and DoD Manual 8570.1, achieving the DoD certification goal -Complete DoD mandated annual Information Assurance user training for the MDA workforce -Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs -Fund MDA Chief Information Office (CIO) civilian salaries <p>FY 2014 Plans: See PE 0603890C MC30 Cyber Operations for FY2014 Base Plans</p>				
<p>Title: Business Automation Services</p> <p align="right">Articles:</p> <p>Description: Provides for the implementation, operations and maintenance of business specific applications.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Sustain an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment -Sustain portal-based Learning Management System 		0.000 0	7.072 0	6.723 0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Host and provide business applications support for Program Resource Internet Database Environment (PRIDE), Information Management Program Activity control Tool (IMPACT), Standard Procurement System (SPS), Personnel Tracking System (PTS), Human Resource Tracking System (HRTS), Computer-aided Facilities Management(CAFM)</p> <p>-Provide server administration hosting licensing and management</p> <p>-Maintain Integrated Access Control System and Diamond II badge system</p> <p>-Maintain hardware and licenses for Defense Enrollment Eligibility Reporting System (DEERS)/Real-time Automated Personnel Identification System (RAPIDS) stations for issuing DoD identification smart cards to MDA employees</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries</p> <p>FY 2014 Plans: Continue efforts as listed under FY 2013 plans for Business Automation Services.</p> <p>The change between FY 2013 and FY 2014 is due to a reduction in software license costs.</p>				
Title: Portal and Data Services		0.000	9.781	7.587
	Articles:	0	0	0
Description: Provides for the implementation, operations and maintenance of Portal, digital records and data archiving functions.				
FY 2012 Accomplishments: N/A				
FY 2013 Plans:				
<p>-Sustain the classified and unclassified MDA Knowledge On-line portal environment including data management, data storage, and data mining services providing access to over four hundred terabytes of Ballistic Missile Defense data available to 8,000 users</p> <p>-Maintain a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting</p> <p>-Maintain compliance with Section 508of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities</p> <p>-Sustain the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool</p> <p>-Manage a software assessment program and conducted reviews of proposed software applications for DoD compliance</p> <p>-Sustain a DoD mandated Electronics Records Management system</p> <p>-Provide MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Fund MDA Chief Information Office (CIO) civilian salaries				
FY 2014 Plans: Continue efforts as listed under FY 2013 plans for Portal and Data Services. The change between FY 2013 and FY 2014 is due to a reduction in software license costs and projected personnel cost savings from the award of the MDA Integrated Communications Services contract (MICS).				
Title: Network and Infrastructure Services		0.000	20.338	20.087
	Articles:	0	0	0
Description: Provides for the implementation, operations, maintenance and Communications Security (COMSEC) for the MDA UNET/CNET.				
FY 2012 Accomplishments: N/A				
FY 2013 Plans: -Sustain core communications distribution services across the MDA Enterprise consisting of two wide area networks, three metropolitan area networks, fourteen local area networks, one hundred eighty sub-networks and over five thousand network devices -Sustain two computing and data centers (Huntsville, Alabama and Colorado Springs, Colorado) across the MDA Enterprise including network operations and performance monitoring; Disaster Recovery and Continuity of Operations rehearsals; internet access management; and web filtering -Architect and develop plans to repair general IT service and business systems -Perform network tracking and analysis and reported metrics on equipment lifecycle and average time to repair -Plan, engineer and implement sustainment projects for general IT service and business systems -Procure, receive, inventory, and manage IT equipment to include network devices and desktop and laptop computers -Provide Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items -Fund MDA Chief Information Office (CIO) civilian salaries				
FY 2014 Plans: Continue efforts as listed under FY 2013 plans for Network and Infrastructure Services. The change between FY 2013 and FY 2014 is due to an increase in IT Engineering required to maintain compliance with Federal Laws and DoD Directives and to ensure IT network equipment is updated and current.				
Title: Information Technology (IT) Planning and Solutions		0.000	9.708	10.283
	Articles:	0	0	0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: Provides IT engineering support for new requirements analysis, design, planning and implementation of IT solutions.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: -Support the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board -Update and maintain current Enterprise architecture documentation -Provide engineering support for change management, configuration management, validation testing and quality assurance -Manage MDA customer IT requirements planning, engineering and project management -Support MDA Command Group IT project planning and documentation -Maintain asset management of IT equipment in accordance with DoD policies -Provide planning, budgeting, and management oversight of IT projects -Ensure compliance with Federal Laws and DoD policies, directives and regulations, including: Clinger-Cohen Act, the Federal Information Security Management Act, and Office of Management and Budget (OMB) IT budget reporting policies -Fund MDA Chief Information Office (CIO) civilian and matrix civilian salaries</p> <p>FY 2014 Plans: Continue efforts as listed under FY 2013 plans for Information Technology (IT) Planning and Solutions. The change between FY 2013 and FY 2014 is due to an increase in IT Engineers required to maintain Federal and DoD compliant systems and to engineer and ensure configuration control of IT network and projects.</p>				
<p>Title: General Information Technology (IT) Services (FY 2012)</p> <p align="right">Articles:</p>		61.182 0	0.000 0	0.000 0
<p>Description: Resources fund the Information Management (IM)/Information Technology (IT), Planning, Policy, modernization, operations, and maintenance costs of the MDA General Services IT infrastructure and MDA IT users.</p> <p>FY 2012 Accomplishments: -Sustained Enterprise Network Operations Security Center (ENOSC) 24 hours a day, 7 days a week (this effort was previously reported in Cyber Security and Information Assurance) -Sustained 8 hours a day, 5 days a week Information Technology (IT) operations of Federal Office Building II in the National Capital Region and Wynn Drive facility in Huntsville, Alabama until decommissioned -Sustained IT operational services 8 hours a day, 5 days a week for administrative and business information systems -Implemented information assurance vulnerability assessment control improvements in accordance with established Plan of Action and Milestones</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Monitored networks for user compliance and DoD policies, and report incidents -Funded hardware and software licenses for Information Technology (IT) operational systems (previously report in Knowledge and Information Management) -Tested and implemented software application upgrades -Maintained the network and help desk services -Provided planning, budgeting, and management oversight of IT projects -Provided web-based training to MDA users on new applications and upgrade -Monitored networks for user compliance with DoD policies and reported incidents -Maintained MDA IT system interface configuration control and asset management -Supported in/out processing operations and relocation of MDA personnel -Maintained asset accountability of IT equipment in accordance with DoD policy -Funded MDA Chief Information Office (CIO) civilian salaries <p>Defense Efficiency - As part of the Department of Defense reform agenda, reductions reported for General IT Services in FY 2012 are \$2.639 million.</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>				
Title: Cyber Security and Information Assurance (FY 2012)		13.779	0.000	0.000
	Articles:	0	0	0
<p>Description: This service strategy provides protection of classified and unclassified infrastructure necessary for planning and coordination of the Director`s RDT&E, operations and maintenance, and upgrade initiatives for the BMDS. This service strategy provides compliance with Federal Information Security Management Act (FISMA) and includes implementation of the DoD Information Assurance Certification and Accreditation Process (DIACAP) to manage risk, conduct security assessments, and monitor compliance with applicable security controls. This vital program of the BMDS and MDA Enterprise consists of cyber security, information assurance, computer network defense, network situational awareness, and certification and accreditation activities to comply with the Global Information Grid Information Assurance Strategic Plan and Goals, DoD information assurance directives, instructions and guidelines.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Funded recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems 				

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Monitored and defended MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year -Collected, analyzed, and reported vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command -Revised and updated Information Assurance certification packages for administrative and business information technology systems reported to DoD and Office of Management and Budget -Ensured MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies -Managed the Information Assurance Workforce Improvement Program to certify Information Assurance professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and DoD Manual 8570.1, achieving the DoD certification goal -Completed annual Information Assurance user training for the MDA workforce -Provided Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>				
Title: Unified Communications (FY 2012)		20.101	0.000	0.000
	Articles:	0	0	0
Description: Resources fund communications for classified and unclassified voice and data circuits and services from the DISA, DISN Video Services Global, the DREN, the Defense Telecommunications Services-Washington and commercial vendors.				
FY 2012 Accomplishments:				
<ul style="list-style-type: none"> -Funded recurring leased circuits (wide area, local area and metropolitan area networks), maintenance agreements and licenses for MDA Enterprise network and telecommunications equipment (classified and unclassified mobile and telephony devices) -Operated, monitored, and sustained recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan -Operated, monitored, and sustained recurring classified and unclassified wireless services -Operated, monitored, and sustained recurring operations for agency wide video teleconference rooms and equipment -Provided and implemented engineering solutions for all unified communication services -Funded MDA Chief Information Office (CIO) civilian salaries 				

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD30: <i>BMD Information Management Systems</i>			
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	FY 2013	FY 2014
Defense Efficiency - As part of the Department of Defense reform agenda, reductions reported for Unified Communications in FY 2012 are \$2.181 million. FY 2013 Plans: N/A FY 2014 Plans: N/A						
Title: Knowledge and Information Management (FY 2012) Description: Resources used to provide web-based engineering, operation, planning, design, application implementation, content management and training for the MDA Knowledge On-Line portal tool and support for graphics and video production to the MDA enterprise. FY 2012 Accomplishments: -Managed MDA business applications and sustain financial and contractual support systems -Managed software assessment program and conduct reviews of proposed software applications for DoD compliance -Sustained the BMDS Integrated Master Schedule and the BMD Asset Management Tool -Conducted privacy impact surveys and support compliance reporting -Managed MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics -Sustained MDA Knowledge Online services -Funded MDA Chief Information Office (CIO) civilian salaries FY 2013 Plans: N/A FY 2014 Plans: N/A				Articles: 13.433 0	0.000 0	0.000 0
Title: Information Technology (IT) Sustainment Engineering (FY 2012) Description: Resources are used to develop, implement, promulgate and monitor processes and IM/IT policies to ensure economical management of information resources in accordance with statutes and DoD.				Articles: 11.818 0	0.000 0	0.000 0

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i></p> <ul style="list-style-type: none"> -Sustained Information Technology (IT) services across the MDA Enterprise and maintain critical spares inventory -Architected and developed plans to repair general IT service and business systems -Performed analysis, tracked, and reported metrics on equipment lifecycle and average time to repair -Planned, engineered and implemented sustainment projects for general IT service and business systems -Revised and tested contingency plans for IT systems across the MDA enterprise -Procured, received, inventoried, and managed IT equipment to include network devices, desktop and laptop computers -Funded MDA Chief Information Officer (CIO) civilian and matrix civilian salaries <p>Defense Efficiency - As part of the Department of Defense reform agenda, reductions report for IT Sustainment Engineering for FY 2012 are \$.406 million.</p> <p><i>FY 2013 Plans:</i> N/A</p> <p><i>FY 2014 Plans:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals	120.313	107.744	92.488

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
---	---	---

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>
• 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
• 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
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	299.012	276.338	129.374		129.374	124.547	51.927	55.808	32.938	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

Remarks

D. Acquisition Strategy

In FY 2012, the Missile Defense Agency awarded a competitive contract for MDA Information Collaboration Services to be performed at all MDA locations.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
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			
End User Support - End User Assistance and Advisory Services	C/CPFF	Colsa:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		3.659		1.678	Oct 2013	-		1.678	Continuing	Continuing	Continuing
End User Support - End User Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, NM, VA	0.000	0.000		3.140		3.863	Oct 2013	-		3.863	Continuing	Continuing	Continuing
End User Support - End User Civilian Travel	Allot	MDA Civilian Travel:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		0.774		0.522	Oct 2013	-		0.522	Continuing	Continuing	Continuing
End User Support - End User IT Hardware/Software Support	C/CPAF	Northrop Grumman:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		8.589		6.436	Oct 2013	-		6.436	Continuing	Continuing	Continuing
End User Support - End User IT Licenses	C/CPAF	Northrop Grumman:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		5.064		4.260	Oct 2013	-		4.260	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	Northrop Grumman:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		11.732		15.280	Oct 2013	-		15.280	Continuing	Continuing	Continuing
Unified Communications - Leased Communications/Licenses	MIPR	DISA/DREN/IT2S:AL, AK, CA, CO, HI, NM, VA	0.000	0.000		9.016		6.728	Oct 2013	-		6.728	Continuing	Continuing	Continuing
Unified Communications - Unified Communications	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.629	Oct 2012	0.304	Oct 2013	-		0.304	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Advisory and Assistance Services															
Unified Communications - Unified Communications Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		0.628		0.630	Oct 2013	-		0.630	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Operational Support	Allot	Northrop Grumman:AL, CO, VA	0.000	0.000		0.895	Oct 2012	2.128	Oct 2013	-		2.128	Continuing	Continuing	Continuing
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	TBD:AL, AK, CO, VA	0.000	0.000		5.405		5.979	Oct 2013	-		5.979	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies:AL, CO, VA	0.000	0.000		3.143	Oct 2012	0.000		-		0.000	0.000	3.143	0.000
Information Assurance/ Computer Network Defense - CND/IA Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		1.727		0.000		-		0.000	0.000	1.727	0.000
Information Assurance/ Computer Network Defense - CND/IA Licenses	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		0.147	Oct 2012	0.000		-		0.000	0.000	0.147	0.000
Information Assurance/ Computer Network Defense - CND/IA Operational Support	C/FFP	Northrop Grumman:AL, CO, VA	0.000	0.000		6.297	Oct 2012	0.000		-		0.000	0.000	6.297	0.000
Business Automation Services - Business Automation Advisory and Assistance Services	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.210	Oct 2012	0.152	Oct 2013	-		0.152	Continuing	Continuing	Continuing
Business Automation Services - Business	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		0.471		0.473	Oct 2013	-		0.473	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Automation Civilian Pay/Travel/PCS															
Business Automation Services - Business Automation Licenses	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		1.608	Oct 2012	1.021	Oct 2013	-		1.021	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Operational Support	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		3.759	Oct 2012	4.062	Oct 2013	-		4.062	Continuing	Continuing	Continuing
Business Automation Services - Business Automation PRIDE Support	C/CPAF	CAMBER:AL, CO, VA	0.000	0.000		1.024	Oct 2012	0.995	Oct 2013	-		0.995	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Services (FY2013) Business Automation Support	MIPR	CACI:AL, CO, VA	0.000	0.000		0.000		0.020	Oct 2013	-		0.020	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Advisory and Assistance Services	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.419		0.462	Oct 2013	-		0.462	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Civilian Pay/Travel/PCS	Allot	MDS Civilian Pay:AL, CO, VA	0.000	0.000		0.628		0.630	Oct 2013	-		0.630	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Licenses and Maintenance	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		2.410	Oct 2012	1.516	Oct 2013	-		1.516	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational	C/CPAF	Online Subscriptions Services:AL, CO, VA	0.000	0.000		0.000		0.240	Oct 2013	-		0.240	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support	C/FFP	TBD :AL, CO, VA	0.000	0.000		6.324	Nov 2012	4.739	Oct 2013	-		4.739	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Network and Infrastructure Services - Network and Infrastructure Services Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		2.355		2.363	Oct 2013	-		2.363	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and Infrastructure Services Advisory and Assistance Services	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.838	Sep 2013	0.912	Oct 2013	-		0.912	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and Infrastructure Services Licenses	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		8.732	Feb 2013	6.561	Oct 2013	-		6.561	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and Infrastructure Services Operational Support	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		8.413	Feb 2013	10.251	Oct 2013	-		10.251	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Advisory and Assistance Services	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.419	Sep 2013	1.140	Oct 2013	-		1.140	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		1.329		1.103	Oct 2013	-		1.103	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions IT Asset Management	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		3.200	Feb 2013	2.482	Oct 2013	-		2.482	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions OMB,OSD, and DOD Compliance Monitoring	C/CPFF	Colsa:AL, CO, VA	0.000	0.000		0.133	Sep 2013	0.365	Oct 2013	-		0.365	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
and Reporting/Contract Deliverable															
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	Northrop Grumman:AL, CO, VA	0.000	0.000		4.117	Feb 2013	2.160	Oct 2013	-		2.160	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - MDA Agency Business Operations	Allot	MDA Business Operations:AL, CO, VA	0.000	0.000		0.510		3.033	Oct 2013	-		3.033	Continuing	Continuing	Continuing
General Information Technology (IT) Services (FY 2012) - Civilian Travel/PCS	Allot	MDA Civilian Travel:AL, CO, VA	0.890	0.817		0.000		0.000		-		0.000	0.000	1.707	0.000
General Information Technology (IT) Services (FY 2012) - Contract Management Oversight	TBD	Various:AL, AK, CA, CO, HI, NM, VA	9.956	0.000		0.000		0.000		-		0.000	0.000	9.956	0.000
General Information Technology (IT) Services (FY 2012) - General IT Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	0.000	1.817		0.000		0.000		-		0.000	0.000	1.817	0.000
General Information Technology (IT) Services (FY 2012) - General IT Advisory/Assistance Services	C/CPFF	General Dynamics IT:Various MDA Locations	1.574	0.000		0.000		0.000		-		0.000	0.000	1.574	0.000
General Information Technology (IT) Services (FY 2012) - IT Hardware/Software Licenses and Maintenance	C/FP	Various:AL, AK, CA, CO, HI, NM, VA	13.278	14.563		0.000		0.000		-		0.000	0.000	27.841	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
General Information Technology (IT) Services (FY 2012) - IT Management Support/ Portfolio/CRMs	C/CPAF	Northrop Grumman:AL, AK, CA, CO, HI, NM, VA	0.000	2.101		0.000		0.000		-		0.000	0.000	2.101	0.000
General Information Technology (IT) Services (FY 2012) - IT Operations	C/CPAF	Northrop Grumman:AL, AK, CA, CO, HI, NM, VA	32.139	35.830		0.000		0.000		-		0.000	0.000	67.969	0.000
General Information Technology (IT) Services (FY 2012) - MDA CIO General IT Services Civilian Pay	Allot	MDA Civilian Pay:AL, AK, CA, CO, HI, NM, VA	2.830	6.054		0.000		0.000		-		0.000	0.000	8.884	0.000
Cyber Security and Information Assurance (FY 2012) - COMSEC	C/CPAF	Northrop Grumman:AL, CO, VA	0.647	0.319		0.000		0.000		-		0.000	0.000	0.966	0.000
Cyber Security and Information Assurance (FY 2012) - DEERS/RAPIDS/ Active Client/Card Support	MIPR	Various:AL, CO, VA	0.080	0.090		0.000		0.000		-		0.000	0.000	0.170	0.000
Cyber Security and Information Assurance (FY 2012) - DIACAP Certification and Accreditation Support	C/CPFF	General Dynamics IT:AL, CO, VA	0.632	0.000		0.000		0.000		-		0.000	0.000	0.632	0.000
Cyber Security and Information Assurance (FY 2012) - DIACAP Certification/Accreditation Support	C/CPFF	Torch:AL, CO, VA	0.388	1.385		0.000		0.000		-		0.000	0.000	1.773	0.000
Cyber Security and Information Assurance (FY 2012) - IAVA Operations and Support	C/CPAF	Northrop Grumman:AL, CO, VA	2.247	2.573		0.000		0.000		-		0.000	0.000	4.820	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Cyber Security and Information Assurance (FY 2012) - Identify Protection Support	C/CPAF	WHS:AL, CO, VA	0.170	0.179		0.000		0.000		-		0.000	0.000	0.349	0.000
Cyber Security and Information Assurance (FY 2012) - Information Assurance Advisory and Assistance Services	C/CPFF	Torch:Various MDA Locations	0.388	3.343		0.000		0.000		-		0.000	0.000	3.731	0.000
Cyber Security and Information Assurance (FY 2012) - Information Assurance Advisory/ Assistance Services	C/CPFF	General Dynamics IT:Various MDA Locations	0.609	0.000		0.000		0.000		-		0.000	0.000	0.609	0.000
Cyber Security and Information Assurance (FY 2012) - Information Assurance ENOSC (Moved to General IT Services for FY 2012)	C/CPAF	Northrop Grumman:AL, CO, VA	2.272	0.000		0.000		0.000		-		0.000	0.000	2.272	0.000
Cyber Security and Information Assurance (FY 2012) - MDA CIO Information Assurance Civilian Pay	Allot	MDA Civilian Pay:AL, CO, VA	0.000	3.119		0.000		0.000		-		0.000	0.000	3.119	0.000
Cyber Security and Information Assurance (FY 2012) - MDA Information Assurance Certification	C/CPAF	Northrop Grumman:AL, CO, VA	1.669	2.771		0.000		0.000		-		0.000	0.000	4.440	0.000
Unified Communications (FY 2012) - Leased Communications - LAN/ WAN	MIPR	DISA/DREN:AL, CO, VA	4.154	4.110		0.000		0.000		-		0.000	0.000	8.264	0.000
Unified Communications (FY 2012) - Leased	C/FP	Various:AL, CO, VA	4.906	5.971		0.000		0.000		-		0.000	0.000	10.877	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Telecom/Wireless/Local/Long Distance															
Unified Communications (FY 2012) - MDA CIO Unified Communications Civilian Pay	Allot	MDA Civilian Pay:AL, CO, VA	0.000	1.284		0.000		0.000		-		0.000	0.000	1.284	0.000
Unified Communications (FY 2012) - Unified Communications Advisory and Assistance Services	C/CPFF	Colsa:Various MDA Locations	0.000	0.552		0.000		0.000		-		0.000	0.000	0.552	0.000
Unified Communications (FY 2012) - Unified Communications Advisory/ Assistance Services	C/CPFF	General Dynamics IT:Various MDA Locations	0.609	0.000		0.000		0.000		-		0.000	0.000	0.609	0.000
Unified Communications (FY 2012) - Unified Communications VTC Operations	C/CPIF	TBD:TBD	0.000	7.194		0.000		0.000		-		0.000	0.000	7.194	0.000
Unified Communications (FY 2012) - VTC Operations	C/CPFF	Microtech:Various MDA Locations	5.604	0.000		0.000		0.000		-		0.000	0.000	5.604	0.000
Unified Communications (FY 2012) - WAN Engineering Sustainment Support	C/CPAF	Northrop Grumman:AL, CO, VA	0.845	0.990		0.000		0.000		-		0.000	0.000	1.835	0.000
Knowledge and Information Management (FY 2012) - Classified MDA Knowledge Online O&M Support	C/CPAF	Northrop Grumman:AL, CO, VA	0.338	1.968		0.000		0.000		-		0.000	0.000	2.306	0.000
Knowledge and Information Management (FY 2012) - Decision Support System	C/CPAF	IBM:AL	0.425	0.000		0.000		0.000		-		0.000	0.000	0.425	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Knowledge and Information Management (FY 2012) - Knowledge Mgt Advisory and Assistance Services	C/CPAF	General Dynamics IT:AL, CO, VA	0.520	0.000		0.000		0.000		-		0.000	0.000	0.520	0.000
Knowledge and Information Management (FY 2012) - Knowledge and Information Software Licenses	C/CPAF	Northrop Grumman:AL, CO, VA	3.104	1.920		0.000		0.000		-		0.000	0.000	5.024	0.000
Knowledge and Information Management (FY 2012) - MDA CIO Knowledge and Information Management Civilian Pay	Allot	MDA Civilian Pay:AL, CO, VA	0.000	1.100		0.000		0.000		-		0.000	0.000	1.100	0.000
Knowledge and Information Management (FY 2012) - PRIDE Application Support	C/CPFF	CAMBER:AL, CO, VA	1.360	1.128		0.000		0.000		-		0.000	0.000	2.488	0.000
Knowledge and Information Management (FY 2012) - Standard Procurement System Support	MIPR	SPS JPMO:AL, CO, VA	0.019	0.424		0.000		0.000		-		0.000	0.000	0.443	0.000
Knowledge and Information Management (FY 2012) - Unclassified MDA Knowledge Online O&M Support	C/CPAF	PHACIL:AL, CO, VA	5.697	6.893		0.000		0.000		-		0.000	0.000	12.590	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - CIO Admin Support	C/CPFF	Alatec:AL, CO, VA	0.136	0.000		0.000		0.000		-		0.000	0.000	0.136	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Information Technology (IT) Sustainment Engineering (FY 2012) - CIO HR Support	C/CPFF	Peopletec:AL, CO, VA	0.124	0.000		0.000		0.000		-		0.000	0.000	0.124	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - Contract Deliverables and OMB, OSD, DoD Compliance Monitoring Reporting	C/CPFF	Colsa:Various MDA Locations	0.246	3.637		0.000		0.000		-		0.000	0.000	3.883	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - Contract Deliverables/ OMB, OSD, DoD Compliance Monitoring Reporting	C/CPFF	General Dynamics IT:Various MDA Locations	1.539	0.000		0.000		0.000		-		0.000	0.000	1.539	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - IT Recapitalization/ Consumables	C/CPAF	Northrop Grumman:AL, CO, VA	4.317	3.736		0.000		0.000		-		0.000	0.000	8.053	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - IT Sustainment Engineering Advisory and Assistance Services	C/CPFF	General Dynamics IT:AL, CO, VA	0.342	0.249		0.000		0.000		-		0.000	0.000	0.591	0.000
Information Technology (IT) Sustainment Engineering (FY 2012) - Implementation/ Architectural Engineering Support	C/CPAF	Northrop Grumman:AL, CO, VA	1.958	2.178		0.000		0.000		-		0.000	0.000	4.136	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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			
Information Technology (IT) Sustainment Engineering (FY 2012) - MDA CIO IT Sustainment Engineering Civilian Pay	Allot	MDA Civilian Pay:AL, CO, VA	0.000	2.018		0.000		0.000		-		0.000	0.000	2.018	0.000
Subtotal			106.012	120.313		107.744		92.488		0.000		92.488			

Remarks
The decrease from FY 2012 to FY 2013 reflects adjustments required to meet Agency priorities.

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

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	106.012	120.313	107.744	92.488	0.000	92.488			

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 0603890C: <i>BMD Enabling Programs</i>			PROJECT MD30: <i>BMD Information Management Systems</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

Remarks N/A									
-----------------------	--	--	--	--	--	--	--	--	--

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2012	✦	✦	✦	✦																								
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2012	✦	✦	✦	✦																								
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2012	✦	✦	✦	✦																								
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2012	✦	✦	✦	✦																								
Complete Annual Information Assurance User Training for MDA Workforce - FY 2012	✦	✦	✦	✦																								
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY12	✦	✦	✦	✦																								
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2012	✦	✦	✦	✦																								
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2012	✦	✦	✦	✦																								
Revise and Test Contingency Plans for Information Technology Systems - FY 2012	✦	✦	✦	✦																								
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY2012	✦	✦	✦	✦																								
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2012	✦	✦	✦	✦																								
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2012	✦	✦	✦	✦																								

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2012	✦	✦	✦	✦																								
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2012	✦	✦	✦	✦																								
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2012	✦	✦	✦	✦																								
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2012	✦	✦	✦	✦																								
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2012	✦	✦	✦	✦																								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2012	✦	✦	✦	✦																								
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2012	✦	✦	✦	✦																								
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance					✦	✦	✦	✦																				
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs					✦	✦	✦	✦																				
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance					✦	✦	✦	✦																				
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems					✦	✦	✦	✦																				

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 0603890C: <i>BMD Enabling Programs</i>
PROJECT MD30: <i>BMD Information Management Systems</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				
Complete Annual Information Assurance User Training for MDA Workforce					◆	◆	◆	◆																								
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services					◆	◆	◆	◆																								
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command					◆	◆	◆	◆																								
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Revise and Test Contingency Plans for Information Technology Systems					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Sustain the Information Technology Infrastructure Across the MDA Enterprise					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</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
Procure, Implement, and Asset Control for Information Technology Operational Systems					◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance - FY 2012	1	2012	4	2012
Sustain the Information Technology Infrastructure Across the MDA Enterprise - FY 2012	1	2012	4	2012
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - FY 2012	1	2012	4	2012
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - FY 2012	1	2012	4	2012
Complete Annual Information Assurance User Training for MDA Workforce - FY 2012	1	2012	4	2012
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - FY12	1	2012	4	2012
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - FY 2012	1	2012	4	2012
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - FY 2012	1	2012	4	2012
Revise and Test Contingency Plans for Information Technology Systems - FY 2012	1	2012	4	2012
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - FY2012	1	2012	4	2012
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - FY 2012	1	2012	4	2012
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications - FY 2012	1	2012	4	2012
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - FY 2012	1	2012	4	2012
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - FY 2012	1	2012	4	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
Procure, Implement, and Asset Control for Information Technology Operational Systems - FY 2012	1	2012	4	2012
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - FY 2012	1	2012	4	2012
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - FY 2012	1	2012	4	2012
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - FY 2012	1	2012	4	2012
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance - FY 2012	1	2012	4	2012
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance	1	2013	4	2013
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	1	2013	4	2013
Procure, Implement, and Asset Control of Hardware Maintenance and Software Licenses for Monitoring Systems of Information Assurance	1	2013	4	2013
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	1	2013	4	2013
Complete Annual Information Assurance User Training for MDA Workforce	1	2013	4	2013
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	1	2013	4	2013
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command	1	2013	4	2013
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	1	2013	4	2018
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	1	2013	4	2018
Revise and Test Contingency Plans for Information Technology Systems	1	2013	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD30: <i>BMD Information Management Systems</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	1	2013	4	2018
Sustain the Information Technology Infrastructure Across the MDA Enterprise	1	2013	4	2018
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	1	2013	4	2018
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	1	2013	4	2018
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	1	2013	4	2018
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	1	2013	4	2018
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	1	2013	4	2018
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	1	2013	4	2018
Procure, Implement, and Asset Control for Information Technology Operational Systems	1	2013	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</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
MC30: <i>Cyber Operations</i>	-	0.000	0.000	17.443	-	17.443	16.355	16.567	18.445	17.415	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

Beginning in FY2014, Cyber Operations content will move to this Program Element 0603890C Enabling, Budget Project MC30. Cyber Operations content is reported in Program Element 0603890C Enabling Programs, Budget Project MD30 Information Assurance/Computer Network Defense prior to FY2014.

A. Mission Description and Budget Item Justification

The Cyber Operations budget project in the Enabling Program Element is executed by the MDA Chief Information Officer who is the Agency Designated Approving Authority (DAA) for MDA Administrative information technology systems. The project provides funds to sustain 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) Plan of Action and Milestones (POA&Ms) for the MDA mission, test and administrative systems. It maintains the Certification & 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. It supports the monitoring and tracking of Cybersecurity mitigations detailed in IT 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).

This project funds the MDA Security Operations Center (SOC), responsible for monitoring, managing, patching, and maintaining MDA network and core IT services; issuing and tracking Technical Compliance Orders; and coordinating overarching Enterprise NetOps. The SOC provides the network security operations centers and supporting processes to protect and defend Ballistic Missile Defense System (BMDS) and the MDA Enterprise information and information systems.

The MDA Computer Emergency Response Team (CERT), funded in this project, monitors the classified and unclassified information technology MDA administrative IT networks and report vulnerabilities. The MDA CERT coordinates with U.S. Cyber Command to identify and implement network vulnerability updates and patches to comply with U.S. Cyber Command vulnerabilities identified for DoD networks.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</i>
---	---	---

The project funds IA governance management and administrative management support, annual Agency-wide computer-based IA training and metrics reporting, implementation of Public Key Infrastructure and Enabling and Communications Security (COMSEC) related activities.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Information Assurance/Computer Network Defense (IA/CND)</p> <p style="text-align: right;">Articles:</p> <p>Description: Provides for the certification of Information Technology networks and systems, monitoring and computer emergency response services.</p> <p>FY 2012 Accomplishments: See PE 0603890C Project MD30 for FY12 accomplishments</p> <p>FY 2013 Plans: See PE 0603890C Project MD30 for FY13 plans</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Monitor and defend MDA mission, test, and administrative information systems 24 hours a day, 7 days a week, 365 days a year -Collect, analyze, and report vulnerability and cyber warfare attack metrics to the MDA Chief Information Officer (CIO), MDA leadership, and U.S. Cyber Command -Ensure MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies -Implement Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches -Prepare and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget -Manage data-at-rest encryption to ensure compliance with Global Information Grid mandated policies -Revise and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget -Fund recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems -Manage the Information Assurance Workforce Improvement Program to certify Information Assurance professionals and report compliance in accordance with Federal Information Security Management Act (FISMA) and Information Assurance Workforce Improvement Program (DoD Manual 8570.1), achieving the DoD certification goal -Complete DoD mandated annual Information Assurance user training for the MDA workforce 	<p>0.000</p> <p>0</p>	<p>0.000</p> <p>0</p>	<p>17.443</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Provide Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs -Fund MDA Chief Information Office (CIO) civilian salaries			
Accomplishments/Planned Programs Subtotals	0.000	0.000	17.443

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</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			
Information Assurance/Computer Network Defense (IA/CND) - BMDs IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton:AL, CO, VA	0.000	0.000		0.000		1.260	Oct 2013	-		1.260	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (IA/CND) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies:AL, CO, VA	0.000	0.000		0.000		2.737	Oct 2013	-		2.737	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (IA/CND) - CND/IA Civilian pay/Travel/PCS	Allot	MDA Civilian Pay:AL, CO, VA	0.000	0.000		0.000		2.048		-		2.048	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (IA/CND) - CND/IA Comsec	MIPR	NSA:AL, CO, VA	0.000	0.000		0.000		0.104	Oct 2013	-		0.104	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (IA/CND) - CND/IA Licenses	C/FFP	Northrop Grumman:AL, CO, VA	0.000	0.000		0.000		3.944	Oct 2013	-		3.944	Continuing	Continuing	Continuing
Information Assurance/Computer Network Defense (IA/CND) - CND/IA Operational Support	C/FFP	Northrop Grumman:AL, CO, VA	0.000	0.000		0.000		7.350	Oct 2013	-		7.350	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		17.443		0.000		17.443			

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	17.443	0.000	17.443			

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</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
--	-----------------	---------	---------	--------------	-------------	---------------	------------------	------------	--------------------------

Remarks

N/A

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</i>
---	---	---

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

	FY 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
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Complete Annual Information Assurance user Training for MDA Workforce									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MC30: <i>Cyber Operations</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command	1	2014	4	2018
Monitor Networks and Systems to Defend Mission, Test, and Administrative Systems on a 24 hours per day, 7 days per week, 365 days per year basis for Information Assurance	1	2014	4	2018
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	1	2014	4	2018
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	1	2014	4	2018
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	1	2014	4	2018
Complete Annual Information Assurance user Training for MDA Workforce	1	2014	4	2018
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	1	2014	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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
MD31: <i>Modeling & Simulation</i>	176.406	50.181	46.608	41.223	-	41.223	32.667	45.358	47.073	51.083	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 mission of MDA's Modeling and Simulation (M&S) Program is 1) to execute a single, integrated, and synchronized program to manage M&S development in support of MDA's BMDS acquisition, 2) to establish, maintain, and refine system M&S data elements and parameters to verify and validate the BMDS M&S domain, and 3) to drive MDA test activities to collect data for use in anchoring M&S.

M&S develops, sustains and delivers system-level models, frameworks, and simulations which are used to examine and evaluate BMDS performance and behaviors of the associated components and elements within a virtual simulation environment. MDA's M&S Program assists the development and acquisition of the BMDS by providing: M&S system and product planning, development, integration, and operation; threat model verification and analysis; and integration and deployment of the Agency's Distributed BMDS Real-Time Hardware-in-the-Loop (HWIL) and digital M&S simulation capabilities as a single, integrated, and synchronized program.

Interdependencies: MDA's M&S program is essential to ensuring missile defense capabilities are affordable and effective. Through the use of verified and validated models and accredited simulation systems, the MDA's M&S program provides a cost effective means to prove and explore the performance space of the BMDS beyond what can be physically tested under current test range conditions. This program enables the concept exploration and functional analyses used to assess BMDS capabilities. Through conceptual simulation activities, M&S provides the capability to design and develop technologies to hedge against future missile threats. These efforts require close coordination with the Operational Test Agencies (OTAs), MDA Program Elements, Combatant Commands (COCOMs), DoD, Joint Staff, and Military Services.

In response to the 2008 Director of Operational Test and Evaluation (DOT&E) BMDS Assessment Report, M&S has developed and is executing Corrective Action Plans. Key tasks include:

- Predicting system performance based on the use of verified and validated models and simulations.
- Performing System Post-Flight Reconstructions (SPFRs) to assess the accuracy of predicted data and confirm BMDS system performance while also further refining and validating BMDS models and simulations.
- Developing refined M&S accreditation criteria between MDA and Operational Test Agency (OTA).

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
<p>- Assessing the Verification and Validation (V&V) status of threat system models, sensor models, interceptor and lethality models.</p> <p>- Awarding a competitive (Full and Open Competition) development contract for an integrated, composable open M&S Framework (Objective Simulation Framework (OSF) to resolve integration challenges across the breadth of the BMDS M&S enterprise.</p> <p>The M&S objective is to evolve the various systems and products to incrementally improve the fidelity of the Agency`s M&S representations to match, as appropriate, the real world performance of the BMDS and meet Warfighter and Agency needs. In particular, MDA`s M&S systems and products provide analysis and decision-making and planning capabilities for Real-World Operations in support of the National Command Authority, Joint Staff, Military Services, North Atlantic Treaty Organization (NATO), Combatant Commands, OTAs, Director of Operational Test & Evaluation (DOT&E), and Allies. Models and simulations are tailored to the specific needs of the Agency`s test events and to match BMDS components in their various stages of development, ranging from low-to-medium fidelity analyses supporting concept definitions studies, to high-fidelity models used to support engineering level activities.</p> <p>Execution of the M&S mission requires reliance on and operation of two simulation frameworks which, when combined to meet specific M&S use case and user requirements with the appropriate fidelity, form a single Objective Simulation Framework (OSF) to enable the simulation of the BMDS performance in a virtual environment. The BMDS M&S system is evolving into a fully integrated End-to-End system for all M&S uses and venues. The final integrated system will merge the Single Stimulation Framework (SSF) and Digital Simulation Architecture (DSA) into one seamless M&S system that will meet both real-time and non-real time simulation needs. This combined framework, called the Objective Simulation Framework (OSF), will host all simulated activities, events, scenarios, and Element and Threat models. MDA will use the end-to-end M&S System to conduct BMDS ground tests, Performance Assessments (PAs), Technical Assessments (TAs), component training, Wargames, Flight Tests analysis, Threat Analysis, International Event Simulations, and to support COCOM exercises.</p> <p>The Core Truth Modeling program provides consistent and common Phenomenology, Lethality, Environment, and Threat capabilities for Agency M&S venues. Phenomenology models address missile hard body optical and infrared signatures, as well as the plume produced by the missile engines. Lethality models represent the impact of the BMDS missile kill vehicle (KV) (i.e. Ground-Based Interceptor, Standard Missile-3 (SM-3), Terminal High Altitude Area Defense (THAAD)) on reentry vehicles (RVs). Lethality results include percentage of destruction and direction and speed of debris fragments. Environment modeling provides a representation of natural and man-made endo and exo-atmospheric conditions (e.g., rain, wind, sea state) for simulations. The common threat engineering capability produces adversary trajectory and signature data to enable design, verification, and assessment of the BMDS and associated Components concepts and requirements. Common threat data is used in various BMDS simulation events (e.g., flight, ground, performance assessment, warfighter training/exercises) to prove the performance of the BMDS. These threat representations are derived from the Adversary Capability Document (ACD) and Adversary Data Packages (ADP).</p> <p>MDA`s M&S capabilities, systems and products are in use throughout the BMDS and provide the Warfighter and Operational Test Agencies (OTAs) the capability to evaluate both the BMDS and individual components. MDA works to validate and accredit system-level models and simulations by anchoring them to ground and flight test events to support accurate and comprehensive assessments of the BMDS. The success of the missile defense program is enabled by quality M&S systems and products that help to demonstrate how BMDS technologies work. In particular, MDA M&S System and Product testing is based on an integrated, comprehensive, and phased test program as outlined in MDA`s Integrated Master Test Plan (IMTP). Within the construct of the IMTP, MDA Element unique M&S systems, subsystems, and components are tested as part of their respective development and integration, a necessary precursor to conducting BMD System-level M&S testing (e.g., integrated</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

ground test, performance/technical assessment venues). Resources for the planning, design, execution and management of this testing are provided in accordance with the BMDS Test Policy, as listed in the most current version of the IMTP.

The MDA M&S program also supports various Allied/Coalition Partner cooperative activities, and various real-world pre- and post-flight launch analyses, and the Israel Cooperative Programs.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization</p> <p align="right">Articles:</p> <p>Description: Modeling and Simulation (M&S) capability development executes an integrated, synchronized program to manage M&S development in support Ballistic Missile Defense System (BMDS) acquisition, providing system-level models and simulations for accurate and comprehensive BMDS performance assessments.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Developed and published the Modeling and Simulations (M&S) Capability Planning Specification (CPS), System/Subsystem Specification (SSS), and System Interface Control Documents (ICD) for the Digital Simulation Architecture (DSA) Framework; and Single Stimulation Framework (SSF) build 1.1.6, and the Multi-Use Simulation Tool (MUST). - Verified and adjudicated stakeholder Modeling and Simulation need statements, capability statements, and capability packages for Epoch testing and assessment in Performance Assessments (PAs), Ground Test Campaigns, and COCOM exercises. - Provided updates and expanded the over 170 model capability descriptions in the Missile Defense Agency's Modeling and Simulation catalog. - Executed traceability between the Modeling and Simulation requirements database and product development via the above mentioned specifications. - Utilized system engineering processes to produce capability planning and performance specifications in support of Modeling and Simulation product development to enable Missile Defense Agency ground tests, training events, BMDS exercises, BMDS wargames, BMDS Performance Assessments (PAs), and Missile Defense Agency element integration. - Supported the update and publishing of the Agency's Integrated Master Test Plan (IMTP). - Provided export-authorized M&S software to nations or international organizations. - Supported Technical Interchange Meetings (TIMs) and the Bilateral Activities via Secure Interactive Link (BASIL) Project Arrangement with the United Kingdom (UK). <p>FY 2013 Plans:</p> <p>Development:</p> <ul style="list-style-type: none"> - Continue implementation of the final Transition Plan for retirement of the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) frameworks, and assess readiness for a phased Objective Simulation Framework (OSF) introduction into M&S venues. 	<p>6.815</p> <p>0</p>	<p>8.612</p> <p>0</p>	<p>7.617</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Deploy Build 1 of the Objective Simulation Framework (OSF) to support all M&S Use Cases. - Provide integrated Verification, Validation & Accreditation (VV&A) of MDA M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and tier one Combatant Command (COCOM) exercises in accordance with events planned per the current approved Integrated Master Test Plan (IMTP). <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Update and expand the 170+ model capability descriptions in MDA's M&S catalog. - Maintain traceability between the M&S requirements database and M&S product development. - Produce capability documents and specifications for M&S product development to enable BMDS Ground Tests, Training events, Exercises, Wargames, Performance Assessments (PAs), and Element Integration. - Support requests to export M&S software to nations or international organizations. - Support Technical Interchange Meetings (TIMs) and the Bilateral Activities via Secure Interactive Link (BASIL) Project Arrangement with the United Kingdom. - Support system engineering capability trades which are essential in the assessment of all BMDS capability deliveries (including BMDS capability deliveries for Phased Adaptive Approach (PAA) Phase II, Homeland Defense and Regional Phased Adaptive Approach). - Implement the Transition Plan to replace the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) with an Objective Simulation Framework (OSF) to support all M&S Use Cases. - Provide integrated verification, validation and accreditation (VV&A) of MDA's M&S at the system level for specific events, to include Technical Assessment, PAs, and Ground Tests that support BMDS fielding decisions, and Combatant Command (COCOM) exercises. 				
<p>Title: M&S Digital Framework, Simulation, Models</p> <p align="right">Articles:</p>		12.728 0	16.083 0	14.225 0
<p>Description: The Modeling and Simulation (M&S) Digital Framework, simulation, and models effort includes: development and sustainment of digital products and the architecture framework, and delivery/maintenance of infrastructure for Ballistic Missile Defense System (BMDS) Performance Assessments (PAs), Warfighter events, and BMD International Simulation events.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Developed and delivered releases of Modeling & Simulation (M&S) digital products: -- Digital Simulation Architecture (DSA) framework for use in Performance Assessments (PAs), Pre-and Post-Mission Tests, and initiated real-time venue support to , Command and Control, Battle Management, and Communications (C2BMC) software Spiral Testing through the Multi-Use Simulation Tool (MUST), which is a real-time, BMDS digital simulation utilizing DSA and Element-provided models for use in C2BMC v8.x software spiral testing and predictive analysis. 				

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

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

	FY 2012	FY 2013	FY 2014
<p>-- Missile Defense Space warning Tool (MDST) to include JTAGS and SBIRS representations for use in Performance Assessments (PAs), Developmental Engineering, and Warfighter training and exercises. MDST supported 139 exercises simulating 35,452 missile launches with a 100% success rate.</p> <p>-- BMD International Simulation for use in BMD demonstrations, BMD education, future concept evaluation, Warfighter wargames, and international collaboration.</p> <p>- Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting various uses:</p> <p>-- Performance Assessment (PA) Simulation and System Post-Flight Reconstructions (SPFRs).</p> <p>-- Warfighter exercises, Warfighter Training, Element developmental engineering, and Ground Test campaign.</p> <p>- Enabled maintenance of the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises.</p> <p>- Provided software support for PATRIOT System Effectiveness Model (PSEM) for use in Performance Assessments (PAs), SPFRs, and Ground Tests.</p> <p>- Provided operational control and maintenance of Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL.</p> <p>- Implemented a new spiral development process for digital simulations which included improved system-level verification of component models. Executed and completed four 3-month spirals which improved Element model interoperability.</p> <p>FY 2013 Plans:</p> <p>Development:</p> <p>- Begin migration of Digital Simulation Architecture (DSA) into Objective Simulation Framework (OSF).</p> <p>- Continue requirements management for product development activities (e.g., Element Model integration into OSF's standards-based open architecture).</p> <p>Sustainment:</p> <p>- Sustain the BMD International Simulation (ISIM) and release v9.0 in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations.</p> <p>- Sustain and delivered major releases of M&S digital products in support of MDA's Phased Adaptive Approach.</p> <p>Approach Phase I/II Performance Assessment associated events:</p> <p>- Release DSA framework v4.1 for use in System Post-Flight Reconstruction (SPFR) and special studies.</p> <p>- Release Missile Defense Space warning Tool (MDST) for use in Warfighter exercises and in anticipation of Performance Assessment 06 (PA06).</p> <p>- Provide software support for Patriot System Effectiveness Model (PSEM) for use in Performance Assessment 06 (PA06).</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>- Maintain the BMDS Discrete Event Simulation (DE SIM) supporting real-time venues including Warfighter exercises, Warfighter Training, Command and Control, Battle Management, and Communications (C2BMC) software Spiral Testing for MDA's release of C2BMC v8.x development.</p> <p>- Provide software operations/maintenance support to the Extended Air Defense Simulation (EADSIM) code base for use in Warfighter exercises, training venues and COCOM planning tools.</p> <p>Event Integration/Support Operations:</p> <p>- Integrate, test, functionally qualify, and deliver end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool, and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessment (PAs):</p> <p>-- Digital Simulation Architecture-Performance (DSA-P) in support of Performance Assessment 04 (PA 04) BMDS PAA Phase 1 Assessment.</p> <p>-- DSA-P in support of Flight Test, Ground-based Midcourse 06B (FTG-06B) System Post Flight Reconstruction (SPFR).</p> <p>-- DSA-P in support of Flight Test, Operational 1 (FTO-01) System Post Flight Reconstruction (SPFR).</p> <p>- Initiate and continue integration, testing end to end BMDS simulations supporting various events (utilizing Digital Simulation Architecture, Missile Defense Space Tool (MDST), and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessments (PAs):</p> <p>-- DSA-P in support of Flight Test, Standard Missile 3-20 Event 2 (FTM-20E2) System Post Flight Reconstruction (SPFR).</p> <p>-- Control and maintain Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL.</p> <p>-- Control and maintain Performance Assessment (PA) Simulation ensembles in support of M&S development, Integration, and events in the Digital Test and Integration Center (DTIC) and Simulation Execution Center (SEC) in Colorado Springs, CO.</p> <p>- Plan, prepare and execute BMDS Model & Simulation Events to include a System Level High fidelity digital event, Two System Post Flight Reconstruction events to support Model Validation of the Hardware-in-the-Loop (HWIL) and digital venues and a System Pre-Mission Event to support a flight test.</p> <p>- Provide early warning support for a Joint Integrated Air and Missile Defense Organization sponsored Joint Distributed Engineering Plant Event and Warfighter event.</p> <p>FY 2014 Plans:</p> <p>- Incorporate four advanced M&S performance capability builds into M&S Digital Simulation Architecture (DSA) digital representations to support advanced tracking, discrimination, engagement and associated upper tier debris mitigation, and lower</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD31: <i>Modeling & Simulation</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>tier engagement coordination to satisfy Phased Adaptive Approach (PAA) Phase II/III needs in BMDS Performance Assessment test venues.</p> <ul style="list-style-type: none"> - Begin the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaigns. - Integrate, test, functionally qualify, and deliver end to end BMDS simulations supporting various events (utilizing the OSF and Element-provided medium/high-resolution models) to support full-envelope BMDS Performance Assessment (PAs). - Control and maintain Performance Assessment (PA) Simulation ensembles for Element M&S development laboratory use in the Digital M&S Integration Center (DMIC) in Huntsville, AL. - Provide digital representations for use during International Simulations (8.1 and 8.2), Missile Defense Space Warning Operations (version 17.0), an FY 2014 Congressional Wargame, and the Multi-National and National Missile Defense Conference Wargames. - Perform operational planning for the FY 2015 BMDS Performance Assessment (PA06a) event. <p>FY 2014 decrease is due to initial consolidation of Digital and HWIL frameworks as part of OSF implementation.</p>				
<p>Title: M&S HWIL Framework, Simulations, Models</p> <p align="right">Articles:</p> <p>Description: The M&S Hardware-in-the-Loop (HWIL) framework, models and simulations effort develops, maintains and deploys the HWIL framework hardware and software for use at element laboratories and Combatant Command (COCOM) locations to support IMTP test events, Ballistic Missile Defense System (BMDS) capability delivery assessments, Warfighter training, exercises, and wargames.</p> <p>FY 2012 Accomplishments: A portion of the FY 2012 program content is reported under project MD09 PE 0603892C.</p> <ul style="list-style-type: none"> - Developed the Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF). - Integrated the Single Stimulation Framework (SSF) with at COCOM, training, and exercise Host Nation locations, including the ARROW Hardware-in-the-Loop (HWIL) facility. - Continued integration of the Single Stimulation Framework (SSF) with additional Allied/Coalition elements - Completed Cobra Dane closure interface development. - Began integration of Single Stimulation Framework (SSF) with Upgraded Early Warning Radar (UEWR) Clear Air Force Station (AFS). - Provided Single Stimulation Framework (SSF) sustainment, maintenance and fielded product support. - Deployed and integrated the Single Stimulation Framework (SSF) to support Ground Base Mid-Course and BMDS Sensors directorates stand-alone training and the Distributed Multi-Echelon Training System (DMETS) capability. 		8.438 0	10.663 0	9.431 0

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

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

	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Completed deployment and integration of the Single Stimulation Framework (SSF) Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. - Began installation of the Single Stimulation Framework (SSF) software capability and necessary hardware/ maintenance to support a 2nd parallel test string (Ground Test assets only). - Demonstrated initial Open Architecture (OA) redesign capabilities. - Deployed and installed Single Stimulation Framework (SSF) node in fielded AN/TPY-2 shelter. <p>FY 2013 Plans:</p> <p>Development:</p> <ul style="list-style-type: none"> - Migrate Hardware-in-the-Loop (HWIL) functionality into the Objective Simulation Framework (OSF) - Continue requirements management for product development activities (e.g., OSF) <p>Sustainment:</p> <ul style="list-style-type: none"> - Provide sustainment, maintenance and product support of BMDS Hardware-in-the-Loop (HWIL) stimulation framework--Single Stimulation Framework (SSF) for Elements integration, BMDS ground, flight tests and training and support MDA CONUS and host nation exercises - Provide sustainment, maintenance and product support of BDMS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) to support Ground Base Mid-Course (GM) and BMDS Sensors (SN) directorates stand-alone training and the Distributed Multi-Echelon Training System (DMETS) capability - Sustain Single Stimulation Framework (SSF) framework capabilities for GM and SN element framework for Pre-Mission Test (PMT) test support, Countdown training and post flight reconstruction (PFR) - Sustain Single Stimulation Framework (SSF) support to BMDS System Pre-Mission Test (PMT) and Post Flight Reconstruction (PFR) activities - Concept initial Single Stimulation Framework/Objective Simulation Framework (SSF/OSF) Open Architecture redesign capabilities <p>Event Integration/Support Operations:</p> <ul style="list-style-type: none"> - Continue incremental deployment and integration of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) Objective Hardware for MDA Elements and a Releasable configuration for Allies to modernize SSF Interface Unit (SIU) fleet and minimize obsolescence - Begin integration of Optimistic Sensor Model (OSM) integration into Single Stimulation Framework (SSF) - Integrate the BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture 			

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD31: <i>Modeling & Simulation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Initiate execution of the Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation. - Provide for Single Stimulation Framework (SSF) - Begin development of Real Time, scaled Real Time, non Real Time operational model. - Implement improved Instantaneous Object Processing capabilities in BMDS Ground test. - Remove all support for the Missile Defense System Exerciser (MDSE) framework and integrate all Missile Defense System Exerciser (MDSE) mission requirements into Single Stimulation Framework (SSF) contracts and plan for future Objective Simulation Framework (OSF) integration. - Define transition plan from Single Stimulation Framework (SSF) contracts to Objective Simulation Framework (OSF) contracts for BMDS ground test and Warfighter use cases. - Complete installation of BMDS Hardware-in-the-Loop (HWIL) Single Stimulation Framework (SSF) software capability and necessary hardware maintenance (MDA/DTR funded) to support a 2nd parallel test string capability. - Begin execution of Cobra Dane air gap closure interface development. - Plan the integration of Single Stimulation Framework (SSF) with Upgraded Early Warning Radar (UEWR) Clear Air Force Station (AFS). <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Deliver the Objective Simulation Framework (OSF) Version 2.0 to begin the transition of Hardware-in-the-loop (HWIL) capabilities. - Deliver improved debris and phenomenology modeling capabilities to support BMDS Phased Adaptive Approach (PAA) Phase III/IV needs. - Incorporate advanced M&S capabilities into the next version of the OSF for tracking, discrimination, engagement and associated upper tier debris mitigation, launch/engage on remote, as well as lower tier engagement coordination to satisfy PAA Phase III/IV needs. - Control and maintain the HWIL Integration Laboratory for Element M&S in Huntsville, AL. - Provide support for scheduled events Global Lightning 14, Terminal Fury 14, Vigilant Shield 14, Global Defender (GDEx06 Part 1), and the Distributed, Focused and Integrated Ground Test Events as presented in the Integrated Master Test Plan (IMTP). <p>FY 2014 decrease is due to initial consolidation of Digital and HWIL frameworks as part of OSF implementation.</p>				
Title: M&S VV&A and Test Operations		13.297	0.000	0.000
Articles:		0	0	0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD31: <i>Modeling & Simulation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: The M&S Validation and Accreditation (VV&A) and Test Operations effort reports model and system M&S accreditation status, and prepares and delivers system VV&A plans and reports for Ground Tests, Exercises and Digital Performance Assessments.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Provided integrated Verification, Validation and Accreditation (VV&A) of MDA Modeling & Simulation (M&S) at the system level for specific uses, to include Technical Assessments (TAs), Performance Assessment (PA), Ground Tests that support Ballistic Missile Defense System (BMDS) fielding decisions, and tier one Combatant Command (COCOM) exercises. - Developed integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for Focused Ground Tests, Integrated Ground Tests, Performance Assessments (PAs) (plans only), and COCOM exercises. - Worked closely with Elements, Test Community, System Engineering, and Operational Test Agencies (OTAs) to ensure M&S for each event met intended uses and objectives, and had proper Verification, Validation and Accreditation (VV&A) documentation and evidence, to include benchmarking/anchoring pedigree. - Conducted system-level Verification and Validation (V&V) of threat trajectory and signature; ensured end-to-end environmental implementation was consistent and that correct communications and architecture behaved properly and interoperability was adequately addressed. - Developed and implemented Modeling and Simulation (M&S) V&V standards consistent with industry best practices. - Developed, implemented and provided configuration control of a web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement. - Led BMDS Verification, Validation and Accreditation (VV&A) working group to improve Verification, Validation and Accreditation (VV&A) operations and ultimately improve BMDS performance prediction. - Developed model and simulation target requirements to support Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) test conditions. <p>FY 2013 Plans: FY 2013 Plans have moved to Budget Project MT23 PE 0603890C in accomplishment 'M&S VV&A and Test Operations'</p> <p>FY 2014 Plans: N/A</p>				
<p>Title: M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication)</p> <p align="right">Articles:</p> <p>Description: The Core Truth Model program provides consistent and common Phenomenology, Lethality, Environment, Communications, and Threat models for Ballistic Missile Defense Systems (BMDS) M&S venues and supports all Digital and</p>		8.903 0	11.250 0	9.950 0

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Ground Test Events and Wargaming Exercises. The Core Truth Model efforts are critical in the assessment of all BMDS capability deliveries.</p> <p><i>FY 2012 Accomplishments:</i></p> <ul style="list-style-type: none"> - Produced threat trajectory data using the Threat Modeling Simulation System (TMSS). These data are used to create Integrated Threat Packages (ITP), which provide threat truth data for Ground Tests, Performance Assessments/Technical Assessments (PA/TA), wargames, exercises, Distributed Multi-Echelon Training System (DMETS) events, and MDA Engineering studies and Flight Tests. - Produced Trajectory Generator External (TGx), a desk tool designed for analysts to generate their own engineering trajectories for concept analysis, engineering studies, etc. It uses the same missile models, physics, and environmental models as used in TMSS. TGx is provided to over 150 users including OSD Cost Assessment and Programs Evaluation (CAPE), Joint Integrated Air and Missile Defense Organization (JIAMDO), other MDA users, Ballistic Missile Defense System Operational Test Agency, Service Operational Test Agencies, and Warfighters. - Completed integration of Environment modeling capabilities to provide common and consistent environmental data to digital system-level M&S events. - Developed model and simulation target requirements to support Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) test conditions. - Produced Kinetic Impact Debris Distribution (KIDD) threat inputs and Post Intercept Debris (PID) database for Fast Eagle Inc 1 and GTI-04e Part 1, including validation documentation. - Produced KIDD target inputs and PID database for FTI-01 System Pre-Mission Test (SPMT), sensor assessments, and range safety assessments. - Supported KIDD-based range safety assessments for FTM-15, USFT-4, and FTT-12. - Supported GTX-04 pre and post test Post Intercept Debris assessment. - Supported off-line end game lethality assessments for GTI-04e Part 1 with Parametric Endo-Exo-atmospheric Lethality Simulation (PEELS) as well as accredited PEELS support for FTT-12 IOT&E. - Developed PEELS target models to support FTI-01 and FTG-06b Operational Test Agency assessments. - Supported Nimble Titan 12 event consequence assessments with Post-Engagement Ground Effects Model (PEGEM). - Released KIDD 6.8 and distributed to 230 users in 43 organizations. Released PEELS 12.1 and distributed to 14 users in 7 organizations. - Delivered software beta versions of KIDD 6.8.2 and PEELS 12.2 to IV&V agent and PEGEM API 1.2. - Released software updates of Optical Signature Code (OSC) 21.1 and Optical Signature In-Line Generator (OPTISIG) 7.2 in March 2012; Fast Line-of-Sight Imagery for Target and Exhaust Plume Signatures (FLITES v2) 1.1 in August 2012, and 			

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD31: <i>Modeling & Simulation</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
Spacecraft/Orbiter Contamination Representation Accounting for Transiently Emitted Species- Parallel (SOCRATES-P) 2011 in August 2012.				
FY 2013 Plans:				
Development:				
<ul style="list-style-type: none"> - Conduct requirements management for product development activities (e.g., Objective Simulation Framework (OSF)). - Develop capabilities-based and intelligence-credible missile models based on the MDA Threat Systems Engineer specifications. - Initiate several Small Business Innovative Research (SBIR) Phase II Efforts to address Critical Engagement Conditions (CEC) and Empirical Measurement Events (EMEs) identified deficiencies related to Characterization and Incorporation of Vernier Engines within the Plume Modeling Process, Advanced Particle Treatment in Modeling Rocket Exhaust Plumes and Star Background Modeling. - Initiate New phase I Small Business Innovative Research (SBIR) topics to address Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs). 				
Sustainment:				
<ul style="list-style-type: none"> - Conduct requirements management for product development activities (e.g., Optical Signatures Code (OSC), Optical Signatures In-Line Generator (OPTISIG), Kinetic Impact Debris Distribution (KIDD), Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS), Post Engagement Ground Effects Model (PEGEM)). - Provided M&S software development, sustainment and technical support for phenomenology and lethality model, development (e.g., Optical Signature Code (OSC), Optical Signatures In-Line Generator (OPTISIG), Kinetic Impact Debris Distribution (KIDD), Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS), Post Engagement Ground Effects Model (PEGEM), Rocket Plume Flowfield Model (RPFM), Plume Simulation (PLUS), Standard Plume Ultraviolet Radiation Code (SPURC), and Fast Line-of Sight Imagery for Target and Exhaust Plume Signatures (FLITES)). - Assist in the integration and support of endgame lethality utilizing PEELS tool into the modeling frameworks. - Enhance Core Lethality Models (KIDD, PEELS) capabilities to model post intercept debris and engagement lethality to ensure BMDS performance may be accurately modeled to Operational Test Agency (OTA) requirements. - Provide M&S software maintenance and sustainment for the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to support Integrated Master Test Plan (IMTP) threat production. - Provide M&S software maintenance and sustainment for the TGx trajectory generator analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) to support IMTP events. - Initiate Systems Engineering efforts to support integration of all applicable Core Truth Model functions into Objective Simulation Framework (OSF) framework. 				
FY 2014 Plans:				

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Implement next generation truth representations for phenomenology and lethality to meet advanced BMDS capability needs for tracking, discrimination and engagement in support of Phased Adaptive Approach (PAA) Phase III/IV. -Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD), Optical Signatures Code/Optical Signature Inline Generator (OSC/OPTISIG)) until fully transitioned. -Provide M&S software for the Threat Modeling Simulation System (TMSS) threat production architecture (e.g. integration of new/updated missile models and threat system capabilities) to support Integrated Master Test Plan (IMTP) threat production. -Provide M&S software for the TGx trajectory generator analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) to support IMTP events. -Continue efforts to support integration of all applicable Core Truth Model functions into Objective Simulation Framework (OSF) framework. -Provide support for scheduled events Global Lightning 14, Terminal Fury 14, Vigilant Shield 14, Global Defender (GDEx06 Part 1), and the Distributed, Focused and Integrated Ground Test Events as presented in the IMTP. FY 2014 decrease is due to initial consolidation of Digital and HWIL frameworks as part of OSF implementation.			
Accomplishments/Planned Programs Subtotals	50.181	46.608	41.223

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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 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

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

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>
• 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

Remarks

D. Acquisition Strategy

The Modeling & Simulation (M&S) acquisition strategy utilizes full and open competition to develop, acquire and deliver the integrated architectures/frameworks while the Elements, using the same open competition methods, develop and deliver models of their systems. The Digital and Hardware-in-the-Loop (HWIL) product centers integrate the suite of M&S into a composite simulation capability, all based on an open architecture. M&S achieves this end-state via close collaboration between its integrating contractor teams (Digital and HWIL) and those of the Element prime contractors, with additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs).

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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			
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Configuration & Risk Management	C/FFP	ManTech:CO	4.280	1.729		2.185	Oct 2012	1.933	Oct 2013	-		1.933	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Integrated Master Plan	C/FFP	ManTech:CO	2.155	1.724		2.178	Oct 2012	1.926	Oct 2013	-		1.926	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Product Capability Documents	C/FFP	Boeing:AL	11.640	3.362		4.249	Oct 2012	3.758	Oct 2013	-		3.758	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for International Programs	C/CPAF	Northrop Grumman:CO	33.998	3.485		4.403	Oct 2012	3.894	Oct 2013	-		3.894	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for Performance Assessment	C/CPAF	Northrop Grumman:CO	33.067	9.243		11.680	Oct 2012	10.331	Oct 2013	-		10.331	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL - Single Stimulation Framework & Objective Simulation Framework Product Development & Deployment	C/CPAF	Boeing:AL	44.981	8.438		10.663	Oct 2012	9.431	Oct 2013	-		9.431	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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			
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - Communication Network Model Development	C/CPAF	Northrop Grumman:CO	2.149	0.266		0.336	Oct 2012	0.297	Oct 2013	-		0.297	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - Lethality/Phenomenology Modeling	MIPR	AMRDEC:AL	17.889	3.583		4.527	Oct 2012	4.004	Oct 2013	-		4.004	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - PLET-C Integration, Assembly, Test & Checkout	C/CPAF	Northrop Grumman:CO	2.955	0.421		0.532	Oct 2012	0.471	Oct 2013	-		0.471	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - Threat Modeling Simulation System	C/CPAF	Northrop Grumman:CO	10.274	2.328		2.942	Oct 2012	2.602	Oct 2013	-		2.602	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - Trajectory Generator External	C/CPAF	Northrop Grumman:CO	4.719	2.305		2.913	Oct 2012	2.576	Oct 2013	-		2.576	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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			
Subtotal			168.107	36.884		46.608		41.223		0.000		41.223			

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			
M&S VV&A and Test Operations - M&S VV&A and Test Ops - Ground Test VV&A	C/CPAF	Northrop Grumman:CO	1.221	2.837		0.000		0.000		-		0.000	0.000	4.058	0.000
M&S VV&A and Test Operations - M&S VV&A and Test Ops - M&S Accreditation	C/CPAF	Northrop Grumman:CO	3.683	3.197		0.000		0.000		-		0.000	0.000	6.880	0.000
M&S VV&A and Test Operations - M&S VV&A and Test Ops - Performance Assessment VV&A	C/CPAF	Northrop Grumman:CO	3.395	7.263		0.000		0.000		-		0.000	0.000	10.658	0.000
Subtotal			8.299	13.297		0.000		0.000		0.000		0.000	0.000	21.596	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

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			

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

	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	176.406	50.181	46.608	41.223	0.000	41.223			

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 0603890C: <i>BMD Enabling Programs</i>
PROJECT MD31: <i>Modeling & Simulation</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
Combatant Command Exercise (Vigilant Shield 12) 1Q-FY 2012	▲																											
Ground Test, Distributed O4 (GTD-04d) (Part 2) 1Q-FY 2012	▲																											
Digital Simulation Architecture (DSA) v3.2 1Q-FY 2012	▲																											
Threat Modeling Simulation System (TMSS) v9.1 1Q-FY 2012	▲																											
Combatant Command Exercise (Global Thunder 12) 1Q-FY 2012	▲																											
Ground Test, Integrated O4 (GTI-04) (ISR) FY 2012	+ +	+ +	+ +	+ +																								
National Missile Defense Conference Wargame 2Q-FY 2012		▲																										
Ground Test, Focused O4e (GTX-04e) 2Q-FY 2012		▲																										
Single Stimulation Framework (SSF) v1.1.6 2Q-FY 2012		▲																										
Congressional Wargame 2Q-FY 2012		▲																										
Launch Rehearsal Training 2Q-FY 2012		▲																										
FTT-14 System Post-Flight Reconstruction 2Q-FY 2012		▲																										
EUCOM Digisim 2Q-FY 2012		▲																										
Austere Challenge 12 2Q-FY 2012		▲																										
Single Stimulation Framework (SSF) v1.1.5 (2nd HWIL string) 2Q-FY 2012		▲																										
Trajectory Generator External (TGx) v5.2 2Q-FY 2012		▲																										
Multi-Use Simulation Tool (MUST) v1.1 3Q-FY 2012			▲																									
Trajectory Generator External (TGx) v5.3 3Q-FY 2012			▲																									
Nimble Titan 12 3Q-FY 2012			▲																									
Fast Eagle II 3Q-FY 2012			▲																									
Ulchi Freedom Guardian 12 3Q-FY 2012			▲																									
2012 SLV Campaign 3Q-FY 2012			▲																									

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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
Combatant Command Exercise (Terminal Fury 12) 3Q-FY 2012			▲																									
Combatant Command Exercise (Global Lightning 12) 3Q-FY 2012			▲																									
Upgraded Early Warning Radar (UEWR) Trajectories 3Q-FY 2012			▲																									
Space Based Infrared System (SBIRS) Scenarios 3Q-FY 2012			▲																									
Missile Defense National Team IR Boost Scenarios 3Q-FY 2012			▲																									
Global Defender (GDEX04e(IT)) 4Q-FY 2012				▲																								
Digital Simulation Architecture (DSA) v3.3 4Q-FY 2012				▲																								
Missile Defense Space warning Tool (MDST) v15.0 4Q-FY 2012				▲																								
FTI-01 Best Estimate of Trajectory (BET) 4Q-FY 2012				▲																								
Multi-User Simulation Tool (MUST) Trajectories 4Q-FY 2012				▲																								
PA-04 Risk Reduction Scenarios 4Q-FY 2012				▲																								
FTM-16 Best Estimate of Trajectory (BET) 4Q-FY 2012				▲																								
Combatant Command Exercise (Vigilant Shield 13) 1Q-FY 2013							△																					
Digital Simulation Architecture (DSA) Performance v2.0 1Q-FY 2013							△																					
Ground Test, Integrated 04e (GTI-04e) Verification, Validation, and Accreditation 1Q-FY 2013							△																					
Congressional Wargame 2Q-FY 2013																												
National Missile Defense Conference Wargame 2Q-FY 2013																												
International Simulation v9.0 2Q-FY2013																												
Missile Defense Space warning Tool (MDST) v16.0 2Q-FY 2013																												

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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
Combatant Command Exercise (Global Thunder 13) 2Q-FY 2013					△																							
Combatant Command Exercise (Terminal Fury 13) 3Q-FY 2013						△																						
Ground Test, Integrated 04e (GTI-04e) Developmental Test 3Q-FY 2013						△																						
Combatant Command Exercise (Global Lightning 13) 3Q-FY 2013						△																						
Ground Test, Integrated 04 (GTI-04) Operational Test 3Q-FY 2013						△																						
Objective Simulation Framework (OSF) v1.0 3Q-FY 2013						△																						
Digital Simulation Architecture (DSA) v5.0 3Q-FY 2013						△																						
Assured Response (AR04e) 3Q-FY 2013						△																						
Performance Assessment (PA04) 4Q-FY 2013							△																					
Ground Test, Distributed 04 (GTD-04) Developmental Test 4Q-FY 2013							△																					
Ground Test, Distributed 04 (GTD-04) Operational Test 4Q-FY 2013							△																					
Multi-National Missile Defense Conference Wargame 4Q-FY 2013							△																					
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2013							△																					
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014								△																				
Missile Defense Space warning Tool (MDST) v15.1 1Q-FY 2014								△																				
Ground Test, Distributed 04e (GTD-04e Part 2) DT/OT 1Q-FY 2014								△																				
Combatant Command Exercise (Vigilant Shield 14) 1Q-FY 2014								△																				
Ground Test, Distributed 04e Part 2 (GTD-04e Part 2) BMDS Distributed Ground Test 1Q-FY 2014								△																				
Congressional Wargame 2Q-FY 2014									△																			

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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
National Missile Defense Conference Wargame 2Q-FY 2014										△																		
Missile Defense Space warning Tool (MDST) v17.0 2Q-FY 2014										△																		
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014										△																		
Combatant Command Exercise (Global Lightning 14) 3Q-FY 2014											△																	
Fast Event 1											△																	
Ground Test, Focused 06 (GTX-06) 3Q-FY 2014											△																	
International Simulation v8.1 3Q-FY 2014											△																	
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014											△																	
International Simulation v8.2 3Q-FY 2014											△																	
Fast Event 2											△																	
Objective Simulation Framework (OSF) v2.0 4Q-FY 2014												△																
Multi-National Missile Defense Conference Wargame 4Q-FY 2014												△																
Ground Test, Integrated 06 Part 1 (GTI-06 Part 1) BMDS Integrated HWIL Ground Test 1Q-FY 2015													△															
Combatant Command Exercise (Global Thunder 15) 1Q-FY 2015													△															
Combatant Command Exercise (Vigilant Shield 15) 1Q-FY 2015													△															
Congressional Wargame 2Q-FY 2015														△														
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 2Q-FY 2015														△														
National Missile Defense Conference Wargame 2Q-FY 2015														△														
Missile Defense Space warning Tool (MDST) v18.0 2Q-FY 2015														△														
Ground Test, Distributed 06 Part 1 (E) (GTD-06 Part 1 E) 2Q-FY 2015														△														

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</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
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015														△														
International Simulation v8.3 3Q-FY 2015														△														
Ground Test, Distributed 06 Part 1 (C) (GTD-06 Part 1 C) 3Q-FY 2015														△														
Combatant Command Exercise (Terminal Fury 15) 3Q-FY 2015														△														
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) BMDS Integrated HWIL Ground Test 4Q-FY 2015															△													
Global Defender (GDEx06 Part 2) 4Q-FY 2015															△													
Objective Simulation Framework (OSF) v3.0 4Q-FY 2015															△													
Multi-National Missile Defense Conference Wargame 4Q-FY 2015															△													
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 1Q-FY 2016																△												
Combatant Command Exercise (Global Thunder 16) 1Q-FY 2016																△												
Ground Test, Distributed 06 Part 2 (N/P/E) (GTD-06 Part 2 (N/P/E)) Operational Test 1Q-FY 2016																	△											
Ground Test, Distributed 06 Part 2 (N/P/E) (GTD-06 Part 2 (N/P/E)) Developmental Test 1Q-FY 2016																	△											
Warfighter Trial Period -06 Part 2(WFTP-06 Part 2) 2Q-FY 2016																		△										
International Simulation v8.4 3Q-FY 2016																			△									
Ground Test, Focused 07a a (N/P/E/C) (GTX-07a (N/P/E/C)) 3Q-FY 2016																				△								
Combatant Command Exercise (Global Lightning 16) 3Q-FY 2016																					△							
GDEx 07a 3Q-FY 2016																						△						
Combatant Command Exercise (Terminal Fury 16) 3Q-FY 2016																							△					

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Combatant Command Exercise (Vigilant Shield 12) 1Q-FY 2012	1	2012	1	2012
Ground Test, Distributed 04 (GTD-04d) (Part 2) 1Q-FY 2012	1	2012	1	2012
Digital Simulation Architecture (DSA) v3.2 1Q-FY 2012	1	2012	1	2012
Threat Modeling Simulation System (TMSS) v9.1 1Q-FY 2012	1	2012	1	2012
Combatant Command Exercise (Global Thunder 12) 1Q-FY 2012	1	2012	1	2012
Ground Test, Integrated 04 (GTI-04) (ISR) FY 2012	1	2012	4	2012
National Missile Defense Conference Wargame 2Q-FY 2012	2	2012	2	2012
Ground Test, Focused 04e (GTX-04e) 2Q-FY 2012	2	2012	2	2012
Single Stimulation Framework (SSF) v1.1.6 2Q-FY 2012	2	2012	2	2012
Congressional Wargame 2Q-FY 2012	2	2012	2	2012
Launch Rehearsal Training 2Q-FY 2012	2	2012	2	2012
FTT-14 System Post-Flight Reconstruction 2Q-FY 2012	2	2012	2	2012
EUCOM Digisim 2Q-FY 2012	2	2012	2	2012
Austere Challenge 12 2Q-FY 2012	2	2012	2	2012
Single Stimulation Framework (SSF) v1.1.5 (2nd HWIL string) 2Q-FY 2012	2	2012	2	2012
Trajectory Generator External (TGx) v5.2 2Q-FY 2012	2	2012	2	2012
Multi-Use Simulation Tool (MUST) v1.1 3Q-FY 2012	3	2012	3	2012
Trajectory Generator External (TGx) v5.3 3Q-FY 2012	3	2012	3	2012
Nimble Titan 12 3Q-FY 2012	3	2012	3	2012
Fast Eagle II 3Q-FY 2012	3	2012	3	2012
Ulchi Freedom Guardian 12 3Q-FY 2012	3	2012	3	2012
2012 SLV Campaign 3Q-FY 2012	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Combatant Command Exercise (Terminal Fury 12) 3Q-FY 2012	3	2012	3	2012
Combatant Command Exercise (Global Lightning 12) 3Q-FY 2012	3	2012	3	2012
Upgraded Early Warning Radar (UEWR) Trajectories 3Q-FY 2012	3	2012	3	2012
Space Based Infrared System (SBIRS) Scenarios 3Q-FY 2012	3	2012	3	2012
Missile Defense National Team IR Boost Scenarios 3Q-FY 2012	3	2012	3	2012
Global Defender (GDEx04e(IT)) 4Q-FY 2012	4	2012	4	2012
Digital Simulation Architecture (DSA) v3.3 4Q-FY 2012	4	2012	4	2012
Missile Defense Space warning Tool (MDST) v15.0 4Q-FY 2012	4	2012	4	2012
FTI-01 Best Estimate of Trajectory (BET) 4Q-FY 2012	4	2012	4	2012
Multi-User Simulation Tool (MUST) Trajectories 4Q-FY 2012	4	2012	4	2012
PA-04 Risk Reduction Scenarios 4Q-FY 2012	4	2012	4	2012
FTM-16 Best Estimate of Trajectory (BET) 4Q-FY 2012	4	2012	4	2012
Combatant Command Exercise (Vigilant Shield 13) 1Q-FY 2013	1	2013	1	2013
Digital Simulation Architecture (DSA) Performance v2.0 1Q-FY 2013	1	2013	1	2013
Ground Test, Integrated 04e (GTI-04e) Verification, Validation, and Accreditation 1Q-FY 2013	1	2013	1	2013
Congressional Wargame 2Q-FY 2013	2	2013	2	2013
National Missile Defense Conference Wargame 2Q-FY 2013	2	2013	2	2013
International Simulation v9.0 2Q-FY2013	2	2013	2	2013
Missile Defense Space warning Tool (MDST) v16.0 2Q-FY 2013	2	2013	2	2013
Combatant Command Exercise (Global Thunder 13) 2Q-FY 2013	2	2013	2	2013
Combatant Command Exercise (Terminal Fury 13) 3Q-FY 2013	3	2013	3	2013
Ground Test, Integrated 04e (GTI-04e) Developmental Test 3Q-FY 2013	3	2013	3	2013
Combatant Command Exercise (Global Lightning 13) 3Q-FY 2013	3	2013	3	2013
Ground Test, Integrated 04 (GTI-04) Operational Test 3Q-FY 2013	3	2013	3	2013
Objective Simulation Framework (OSF) v1.0 3Q-FY 2013	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Digital Simulation Architecture (DSA) v5.0 3Q-FY 2013	3	2013	3	2013
Assured Response (AR04e) 3Q-FY 2013	3	2013	3	2013
Performance Assessment (PA04) 4Q-FY 2013	4	2013	4	2013
Ground Test, Distributed 04 (GTD-04) Developmental Test 4Q-FY 2013	4	2013	4	2013
Ground Test, Distributed 04 (GTD-04) Operational Test 4Q-FY 2013	4	2013	4	2013
Multi-National Missile Defense Conference Wargame 4Q-FY 2013	4	2013	4	2013
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2013	4	2013	4	2013
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014	1	2014	1	2014
Missile Defense Space warning Tool (MDST) v15.1 1Q-FY 2014	1	2014	1	2014
Ground Test, Distributed 04e (GTD-04e Part 2) DT/OT 1Q-FY 2014	1	2014	1	2014
Combatant Command Exercise (Vigilant Shield 14) 1Q-FY 2014	1	2014	1	2014
Ground Test, Distributed 04e Part 2 (GTD-04e Part 2) BMDS Distributed Ground Test 1Q-FY 2014	1	2014	1	2014
Congressional Wargame 2Q-FY 2014	2	2014	2	2014
National Missile Defense Conference Wargame 2Q-FY 2014	2	2014	2	2014
Missile Defense Space warning Tool (MDST) v17.0 2Q-FY 2014	2	2014	2	2014
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014	2	2014	2	2014
Combatant Command Exercise (Global Lightning 14) 3Q-FY 2014	3	2014	3	2014
Fast Event 1	3	2014	3	2014
Ground Test, Focused 06 (GTX-06) 3Q-FY 2014	3	2014	3	2014
International Simulation v8.1 3Q-FY 2014	3	2014	3	2014
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014	3	2014	3	2014
International Simulation v8.2 3Q-FY 2014	3	2014	3	2014
Fast Event 2	3	2014	3	2014
Objective Simulation Framework (OSF) v2.0 4Q-FY 2014	4	2014	4	2014
Multi-National Missile Defense Conference Wargame 4Q-FY 2014	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Integrated 06 Part 1 (GTI-06 Part 1) BMDS Integrated HWIL Ground Test 1Q-FY 2015	1	2015	1	2015
Combatant Command Exercise (Global Thunder 15) 1Q-FY 2015	1	2015	1	2015
Combatant Command Exercise (Vigilant Shield 15) 1Q-FY 2015	1	2015	1	2015
Congressional Wargame 2Q-FY 2015	2	2015	2	2015
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 2Q-FY 2015	2	2015	2	2015
National Missile Defense Conference Wargame 2Q-FY 2015	2	2015	2	2015
Missile Defense Space warning Tool (MDST) v18.0 2Q-FY 2015	2	2015	2	2015
Ground Test, Distributed 06 Part 1 (E) (GTD-06 Part 1 E) 2Q-FY 2015	2	2015	2	2015
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015	3	2015	3	2015
International Simulation v8.3 3Q-FY 2015	3	2015	3	2015
Ground Test, Distributed 06 Part 1 (C) (GTD-06 Part 1 C) 3Q-FY 2015	3	2015	3	2015
Combatant Command Exercise (Terminal Fury 15) 3Q-FY 2015	3	2015	3	2015
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) BMDS Integrated HWIL Ground Test 4Q-FY 2015	4	2015	4	2015
Global Defender (GDEx06 Part 2) 4Q-FY 2015	4	2015	4	2015
Objective Simulation Framework (OSF) v3.0 4Q-FY 2015	4	2015	4	2015
Multi-National Missile Defense Conference Wargame 4Q-FY 2015	4	2015	4	2015
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 1Q-FY 2016	1	2016	1	2016
Combatant Command Exercise (Global Thunder 16) 1Q-FY 2016	1	2016	1	2016
Ground Test, Distributed 06 Part 2 (N/P/E) (GTD-06 Part 2 (N/P/E)) Operational Test 1Q-FY 2016	1	2016	1	2016
Ground Test, Distributed 06 Part 2 (N/P/E) (GTD-06 Part 2 (N/P/E)) Developmental Test 1Q-FY 2016	1	2016	1	2016
Warfighter Trial Period -06 Part 2(WFTP-06 Part 2) 2Q-FY 2016	2	2016	2	2016
International Simulation v8.4 3Q-FY 2016	3	2016	3	2016

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Focused 07a a (N/P/E/C) (GTX-07a (N/P/E/C)) 3Q-FY 2016	3	2016	3	2016
Combatant Command Exercise (Global Lightning 16) 3Q-FY 2016	3	2016	3	2016
GDEx 07a 3Q-FY 2016	3	2016	3	2016
Combatant Command Exercise (Terminal Fury 16) 3Q-FY 2016	3	2016	3	2016
Objective Simulation Framework (OSF) v4.0 4Q-FY 2016	4	2016	4	2016
TA 07 DT 4Q-FY 2016	4	2016	4	2016
Ground Test, Distributed 07a Part 1 (P) (GTD-7a Part 1 P) Developmental Test 4Q-FY 2016	4	2016	4	2016
Ground Test, Distributed 07a Part 1 (P) (GTD-7a Part 1 P) Operational Test 4Q-FY 2016	4	2016	4	2016
Ground Test, Integrated 07a (GTI-07a) Operational Test 4Q-FY 2016	4	2016	4	2016
Ground Test, Integrated 07a (GTI-07a) Developmental Test 4Q-FY 2016	4	2016	4	2016
Combatant Command Exercise (Global Thunder 17) 1Q-FY 2017	1	2017	1	2017
Ground Test, Distributed 07a Part 1 (N/P) (GTD-07a Part 1 (N/P)) Developmental Test 1Q-FY 2017	1	2017	1	2017
Vigilant Shield 17 1Q-FY 2017	1	2017	1	2017
Ground Test, Distributed 07a Part 1 (N/E) (GTD-07a Part 1 N/E) Operational Test 1Q-FY 2017	1	2017	1	2017
Ground Test, Distributed 07a Part 1 (N/E) (GTD-07a Part 1 N/E) Developmental Test 1Q-FY 2017	1	2017	1	2017
Ground Test, Distributed 07a Part 1 (N/P) (GTD-07a Part 1 (N/P)) Operational Test 1Q-FY 2017	1	2017	1	2017
Performance Assessment (PA 07a) 2Q-FY 2017	2	2017	2	2017
Ground test, Distributed 07a Part 2 (C) (GTD-07a Part 2 C) Operational Test 2Q-FY 2017	2	2017	2	2017
Ground Test, Distributed 07a Part 2 (E) (GTD-07a Part 2 E) Developmental Test 2Q-FY 2017	2	2017	2	2017

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD31: <i>Modeling & Simulation</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Distributed 07a Part 2 (C) (GTD-07a Part 2 C) Developmental Test 2Q-FY 2017	2	2017	2	2017
Ground Test, Distributed 07a Part 2 (E) (GTD-07a Part 2 E) Operational Test 2Q-FY 2017	2	2017	2	2017
Combatant Command Exercise (Global Lightning 17) 3Q-FY 2017	3	2017	3	2017
GDEx 07b Part 1 3Q-FY 2017	3	2017	3	2017
Combatant Command Exercise (Terminal Fury 17) 3Q-FY 2017	3	2017	3	2017
Ground Test, Integrated 07b (GTI-07b) 1Q-FY 2018	1	2018	1	2018
Combatant Command Exercise (Terminal Fury 18) 3Q-FY 2018	3	2018	3	2018
Combatant Command Exercise (Global Lightning 18) 3Q-FY 2018	3	2018	3	2018
GDEx 07b Part 2 3Q-FY 2018	3	2018	3	2018
Performance Assessment (PA07b DT) 3Q-FY 2018	3	2018	3	2018
Ground Test, Distributed 07b Part 1 (GTD-07b Part 1) 4Q-FY 2018	4	2018	4	2018
Ground Test, Distributed 07b Part 2 (GTD-07b Part 2) 4Q-FY 2018	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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</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
MD32: <i>Quality, Safety, and Mission Assurance</i>	65.009	28.528	34.388	30.140	-	30.140	30.905	32.006	31.834	31.949	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

Quality:

Provides on-site Quality Assurance (QA) inspection for all ground and flight tests to ensure that all processes and procedures are adhered to and no short cuts or deviations occur. Quality management system audits are performed on the sub tier supply chain to determine adequacy of contractor requirement flow down and sub tier supplier compliance to industry standards. Quality Subject Matter Experts (SMEs) attend BMDS configuration control boards to ensure quality is implemented across all Programs. Provide quality on-site formal inspection and resolution when troubled suppliers are identified. Initiate and lead on-site Joint Government and Industry Team field support and expertise to assist when critical sole source suppliers are failing. Team conducts initiatives to revamp sole source suppliers by assisting them to get healthy and perform at world class levels. Establishes consistent acquisition and award fee contractual requirements to ensure that a strategic approach is applied to all mission critical systems. Maintains MDA Assurance Provisions for the Agency.

Safety:

Responsible for system safety of the Ballistic Missile Defense System (BMDS) and for the Safety and Occupational Health of personnel located in the National Capital Region (NCR); Huntsville, Alabama; Fort Greely, Alaska; Vandenberg Air Force Base (VAFB), California; and, Dahlgren, VA. Also responsible for ensuring the overall safety of the civilian, contractor and military workforce. BMDS Safety Officers (BSO) provides on-site support 24 hours a day, 7 days a week, 365 days a year to ensure operational safety of systems. Quality, Safety, and Mission Assurance verifies that all systems are functioning and tracking against actual verified targets and that all associated processes and procedures are strictly followed.

Mission Assurance:

Provides in-plant MDA Assurance Representatives (MARs) for the Missile Defense Agency (MDA) at government and contractor facilities. MARs are Government Mission Assurance and Quality experts who provide quality and technical oversight of contractor manufacturing. Mission Assurance Audits are conducted which focus on design margin, the effectiveness of acceptance testing and the sufficiency of manufacturing processes. Audits are performed for contractual requirements, internal requirements, and industry best practices. These audits are one of MDA's most effective methods of enabling change among the MDA contractors and suppliers.

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
---	---	---

Quality, Safety, and Assurance provides Subject Matter Experts (SMEs) who attend all technical reviews (i.e. Design, Test, Mission Readiness Reviews, and Failure Review Boards) to ensure mission assurance principles are consistently implemented across the Ballistic Missile Defense System (BMDS). Quality, Safety, and Mission Assurance develops overarching design and quality standards such as the MDA Assurance Provisions (MAP) for MDA which enhances BMDS reliability. Hardware acceptance reviews and pedigree documentation reviews are performed to ensure all manufacturing rework and repair is performed within approved processes.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Quality, Safety & Mission Assurance</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: Quality: Provided non-advocate independent quality oversight/support to Missile Defense Agency key engineering and configuration management forums Performed configuration management verification and reconciliation for all major flight and ground test assets Maintained process control over integration delivery and conducted quality assurance of all major flight and ground tests Worked with Defense Contract Management Agency (DCMA) and created a DoD supplier database for assessing supplier performance Developed Quality, Safety, and Mission Assurance (QSMA) acquisition & award fee language for consistent application across MDA Created draft update to the MDA Assurance Provisions (MAP)</p> <p>Safety: Maintained on-site safety oversight at key suppliers and Government facilities Conducted safety risk assessments per The Department of Defense Standards Practice for System Safety, of all test and operational systems and ensured catastrophic risks remained improbable Conducted system analysis/assessments such as safety risk assessments, failure modes and effects criticality analysis, safety hazards analysis etc., to minimize flight and operational system risks</p> <p>Mission Assurance: Ensured non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provided technical expertise in internal Top Level Decision technical meetings; identified and determined if a mission assurance/safety/quality subject was properly represented and/or needed to be elevated to the Director</p>	28.528 0	34.388 0	30.140 0

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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>Performed mission assurance audits, production readiness assessments, pedigree reviews and facility assessments at mission critical suppliers, including sub-tier suppliers.</p> <p>BMDS Safety Officers (BSOs): Provided 24 hours a day, 7 days a week, 365 days a year safety monitoring of operational and test systems to ensure safe transition between test and operations Monitored and tracked non-conformance behavior of the operational system. Coordinated with Warfighter and Quality, Safety, and Mission Assurance on proper root cause and resolution of all anomalies</p> <p>MDA Parts and Materials Program: Enhanced BMDS reliability through the following activities: Enforced Program compliance to the Missile Defense Agency Part, Material and Processes Assurance Provisions (PMAP) Provided a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems Updated the Agency's preferred parts and materials list database to facilitate new system design and to identify part obsolescence issues</p> <p>Acquisition Support: Ensured all new acquisitions are in compliance with the MDA Assurance Provisions (MAP), the MDA Parts, Materials and Processes Assurance Provisions (PMAP) and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance Updated the MAP/PMAP to incorporate the latest design, test manufacturing, quality, safety and mission assurance methods to improve future product reliability. Improved MDA's acquisition strategy through participation in the definition and determination of all award fees</p> <p>Technical Assistance to MDA Elements: Performed independent/non-advocate reviews, such as design certification, pedigree, failure, preliminary design, critical design and technical interchange reviews ensuring compliance with industry best practices Provided mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets were employed</p>				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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012	
<p>Provided propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials and processes expertise to programs to enhance reliability.</p> <p>Intra-Agency & Industry Activities: Performed major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers Participated in the Defense Standardization Board and ensured MDA had an equal voice in the specification and standard requirements used across the DoD Initiated & Led quality, safety and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods</p> <p>Safety and Occupational Health: Ensured compliance with DoD Safety and Occupational Health regulations and requirements Performed all required Occupational Safety and Health Inspections of MDA facilities including those in the National Capital Region, Huntsville, AL, Colorado, Vandenberg Air Force Base and Dahlgren, VA Monitored / responded to reports of incidents affecting the health and safety of MDA employees</p> <p>FY 2013 Plans: Quality: Provide Government inspection and process control for flight test operations Perform non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provide non-advocate independent quality oversight/support to Agency operations such as configuration control boards, engineering forums, and material release activities Perform configuration management verification and reconciliation for all major flight and ground test assets</p> <p>Safety: Maintain on-site safety oversight at key suppliers and Government facilities Conduct safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remain improbable</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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
<p>Conduct system analysis/assessments such as safety risk assessments, failure modes and effects criticality analysis, safety hazards analysis etc., to minimize flight and operational system risks</p> <p>Mission Assurance:</p> <p>Provide the Missile Defense Agency Director non-advocate, independent technical assessments on system, subsystem and component design, manufacturing and test activities in support of operational deployment and flight test activities Provide non-advocate technical support to Missile Defense Agency and Program risk boards, configuration control boards, technical interchange meetings and failure review boards Conduct Mission Assurance audits throughout the Missile Defense Agency's supply chain Provide in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers</p> <p>BMDS Safety Officers (BSOs):</p> <p>Provide 24 hours a day, 7 days a week, 365 days a year safety monitoring of operational and test systems to ensure safe transition between test and operations Monitor and track non-conformance behavior of the operational and flight test systems Perform software and hardware configuration verification along with supporting the Warfighter to asset management Provide safety support for Eastern, Western and Pacific Range activities such as safety training and certification</p> <p>MDA Parts and Materials Program:</p> <p>Enhance BMDS reliability through the following activities:</p> <p>Enforce Program compliance to the Missile Defense Agency Part, Material and Processes Assurance Provisions (PMAP) Provide a Part and Material knowledge center to address Program and Supplier part and material issues arising from development or fielded systems Update the Agency's preferred parts and materials list database to facilitate new system design and to identify part obsolescence issues Pursue remedies against counterfeit parts</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Acquisition Support:</p> <p>Ensure all new acquisitions are in compliance with the MDA Assurance Provisions (MAP), the MDA Parts, Materials and Processes Assurance Provisions and all applicable Defense Federal Acquisition Regulation (DFAR), Federal Acquisition Regulation (FAR), and clauses regarding quality, safety and mission assurance</p> <p>Update the Missile Defense Agency Assurance Provisions (MAP) and the MDA Parts Materials and Processes Mission Assurance Plan (PMAP) to incorporate design, test, manufacturing, quality, safety, and mission assurance methods to further improve future product reliability.</p> <p>Improve MDA's acquisition strategy through participation in the definition and determination of all award fees</p> <p>Technical Assistance to MDA Elements:</p> <p>Perform independent/non-advocate reviews, such as design certification, pedigree, failure, preliminary design, critical design and technical interchange reviews to ensure compliance with industry best practices</p> <p>Provide mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed</p> <p>Provide propulsion, solid rocket motor, avionics, mechanical structures, guidance, navigation and control, and parts, materials, and processes expertise to enhance reliability.</p> <p>Intra-Agency & Industry Activities:</p> <p>Perform major stakeholder quality initiatives to improve quality of products, improve onsite processes, and internal requirements at critical sole source suppliers</p> <p>Participate in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD</p> <p>Initiate and lead quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods</p> <p>Safety and Occupational Health:</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 0603890C: <i>BMD Enabling Programs</i>		PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Ensure compliance with DoD Safety and Occupational Health regulations and requirements Perform all required Occupational Safety and Health inspections of MDA facilities including those in the National Capital Region, Huntsville, AL, Colorado, Vandenberg Air Force Base and Dahlgren, VA. Monitor/respond to reports of incidents affecting the health and safety of MDA employees. FY 2014 Plans: Continuation of FY 2013 plans. -Decrease from FY 2013 to FY 2014 reflects consolidation of like efforts.				
Accomplishments/Planned Programs Subtotals		28.528	34.388	30.140
C. Other Program Funding Summary (\$ in Millions) N/A				
Remarks				
D. Acquisition Strategy The execution of an effective Quality, Safety and Mission Assurance program is carried out in collaboration with subject matter expertise found in the Government, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), Contract Support Services (CSS), and Industry.				
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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</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			
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			
Quality, Safety & Mission Assurance - Agency Safety & Occupational Health	C/CPFF	Various Multi:AL, CO, AK, DC	0.879	0.300		0.309	Oct 2012	0.291	Oct 2013	-		0.291	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	NSWC Corona:AL, CA	5.246	2.600		3.178	Oct 2012	2.500	Oct 2013	-		2.500	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Mission Assurance Agency Operations	MIPR	AIS:AL	2.870	0.875		0.800	Oct 2012	0.800	Oct 2013	-		0.800	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Quality Support	C/CPFF	AIS:AL	3.004	1.000		1.200	Oct 2012	1.000	Oct 2013	-		1.000	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety	C/CPFF	APT, INC:AL	4.000	1.268		1.304	Oct 2012	1.000	Oct 2013	-		1.000	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety Officers	MIPR	AMRDEC:AL	2.000	0.649		0.547	Oct 2012	0.319	Oct 2013	-		0.319	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - HQ & Core Management	MIPR	AMRDEC:AL	1.000	0.250		0.300	Oct 2012	0.300	Oct 2013	-		0.300	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - In-Plant Quality Support (MARS)	C/CPFF	Various Multi:AL, AK, CA, CO, FL, HI, NK, MA, MO, MD, UT	4.021	1.455		2.511	Oct 2012	1.815	Oct 2013	-		1.815	Continuing	Continuing	Continuing

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</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			
Quality, Safety & Mission Assurance - Independent Readiness Review Team	C/CPFF	AIS:AL	1.818	0.719		0.773	Oct 2012	0.773	Oct 2013	-		0.773	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Mission Assurance Subject Matter Experts	C/CPFF	APT, INC.:AL	3.125	0.968		0.993	Oct 2012	0.846	Oct 2013	-		0.846	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Operations Support	MIPR	Various Multi:AL, CA	1.149	1.000		1.100	Oct 2012	0.900	Oct 2013	-		0.900	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi:AL, CA, IN	3.338	1.399		1.800	Oct 2012	1.500	Oct 2013	-		1.500	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes - PMP - Program	C/CPFF	APT, INC:AL	1.824	0.217		0.549	Oct 2012	0.545	Oct 2013	-		0.545	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	Aerospace:AL, CA	6.750	2.417		2.920	Oct 2012	2.023	Oct 2013	-		2.023	Continuing	Continuing	Continuing
Subtotal			41.024	15.117		18.284		14.612		0.000		14.612			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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 0603890C: <i>BMD Enabling Programs</i>	PROJECT MD32: <i>Quality, Safety, and Mission Assurance</i>
---	---	---

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			

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			
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance HQ & Core Management (MDA CIV)	Allot	MDA QS:AL, VA, MD, CA, AZ, HI, AK, MA, NJ, FL, AR, UT	12.879	9.395		12.000	Oct 2012	11.877	Oct 2013	-		11.877	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support	C/CPFF	MDA QS:AL, DC, VA	2.500	1.775		2.104	Oct 2012	1.898	Oct 2013	-		1.898	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (Travel/PCS)	Allot	MDA QS:AL, CO, AK, DC, VA	8.606	2.241		2.000	Oct 2012	1.753	Oct 2013	-		1.753	Continuing	Continuing	Continuing
Subtotal			23.985	13.411		16.104		15.528		0.000		15.528			

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	65.009	28.528	34.388	30.140	0.000	30.140			

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 0603890C: <i>BMD Enabling Programs</i>			PROJECT MD32: <i>Quality, Safety, and Mission Assurance</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

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-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 0603890C: <i>BMD Enabling 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>	-	51.532	16.384	18.321	-	18.321	17.887	19.313	21.957	22.013	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	51.532	16.384	18.321
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	51.532	16.384	18.321

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 0603890C: <i>BMD Enabling 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 0603890C: <i>BMD Enabling 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	4.154		0.257	Mar 2013	2.204	Mar 2014	-		2.204	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA:AK, AL, CA, CO, VA	0.000	32.378		0.000		0.000		-		0.000	32.378	64.756	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AL, CO, CA, VA	0.000	15.000		16.127	Oct 2012	16.117	Oct 2013	-		16.117	Continuing	Continuing	Continuing
Subtotal			0.000	51.532		16.384		18.321		0.000		18.321			

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	51.532	16.384	18.321	0.000	18.321			

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603891C: <i>Special Programs - MDA</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	-	287.056	272.387	286.613	-	286.613	368.556	370.561	351.220	347.571	Continuing	Continuing
MD27: <i>Special Programs</i>	-	287.056	272.387	286.613	-	286.613	368.556	370.561	351.220	347.571	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

N/A

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	296.145	272.387	321.450	-	321.450
Current President's Budget	287.056	272.387	286.613	-	286.613
Total Adjustments	-9.089	0.000	-34.837	-	-34.837
• 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	-3.143	0.000			
• SBIR/STTR Transfer	-5.946	0.000			
• Other Adjustment	0.000	0.000	-34.837	-	-34.837

Change Summary Explanation

FY 2014 adjustments reflect realignment to Department of Defense priorities.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603892C: <i>AEGIS BMD</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	3,942.817	1,139.019	992.407	937.056	-	937.056	987.729	1,074.941	880.468	876.685	Continuing	Continuing
MD09: <i>Aegis BMD</i>	3,942.817	1,094.395	775.978	726.109	-	726.109	777.584	872.289	646.214	593.369	Continuing	Continuing
MC09: <i>Cyber Operations</i>	-	0.000	0.000	0.260	-	0.260	0.264	0.269	0.273	0.281	Continuing	Continuing
MT09: <i>Aegis BMD Test</i>	-	0.000	150.291	137.373	-	137.373	117.521	82.152	116.380	159.295	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	-	4.427	15.588	23.963	-	23.963	44.883	67.185	73.515	82.641	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	40.197	50.550	49.351	-	49.351	47.477	53.046	44.086	41.099	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 Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U.S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles (SRBM), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight, Intercontinental Ballistic Missiles (ICBMs) in early phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the Standard Missile-3 (SM-3) configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

Aegis BMD provides/will provide several capabilities in support of the objective to defend allies and deployed forces from intermediate threats:

Aegis BMD 4.0:

-Aegis BMD 4.0 and the SM-3 Block IB missile improve Aegis BMD's ability to engage longer range, more sophisticated ballistic missiles that may deploy countermeasures and are launched in larger raid sizes. Aegis Ballistic Missile Defense (BMD) sensor improvements include the AN/SPY-1 radar's signal processor and the Standard Missile-3 (SM-3) Block IB kinetic warhead's (KW) two-color infra-red (IR) seeker. The Aegis BMD Signal Processor provides a real-time discrimination and characterization capability. The two-color seeker with an Advanced Signal Processor improves sensitivity for longer range targets, high speed processing for

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 0603892C: <i>AEGIS BMD</i>
---	---

multiple targets and improved performance against more sophisticated threats. Besides the two-color IR seeker, the SM-3 Block IB Kinetic Warhead (KW) divert engine system has been upgraded over the SM-3 Block IA. The new divert engine, the Throttleable Divert and Attitude Control System (TDACS), provides more flexible divert to maneuver the Kill Vehicle (KV) to intercept. MDA anticipates Aegis BMD 4.0 to be assessed as operationally suitable and effective the 4th quarter of FY 2013.

Deploying FY 2014:

-Aegis BMD 5.0 - Integrates Aegis BMD 4.0.1 capability into the Navy-developed Open Architecture (OA) computing environment. This change is necessary for Aegis BMD to remain compatible with Navy as ship modernization plans are executed. Improves human-systems interface through display enhancements; eliminates the need for a separate computing system specific to the BMD mission; enables more ships to serve in the BMD mission; supports the BMDS Integrated Build D; and provides the basis for Aegis Ashore.

Deploying in the Future:

- Aegis BMD 5.0. Capability upgrade (CU) - Enhances Aegis BMD 5.0 by restoring the terminal defense layer, increasing raid size and expanding the threat set by FY 2015.
- Aegis BMD computer program baseline and missile system modifications necessary to place Aegis BMD capability on land (Aegis Ashore) will take place by FY 2014.
- SM-3 Block IIA - Aegis BMD and the Japan Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program, which consists of a spiral upgrade to a 21-inch diameter SM-3 missile (SM-3 Block IIA). Missile development will be covered under the SCD project prior to the SM-3 Block IIA incorporation into the Aegis BMD 5.1 upgrade to the Aegis BMD system. The design will be completed by FY 2018; Initial Production by FY 2018; and production by FY 2020.
- Aegis BMD 5.1- Integrates the SM-3 Block IIA missile and future missiles. It will provide an improved terminal defense capability in an Open Architecture (OA) environment. The SM-3 Block IIA missile will expand available battlespace and include Intermediate Range Ballistic Missile (IRBM) and selected longer-range threats, and when combined with additional weapon system modifications, will enable an Engage-on-Remote (EoR) capability. SM-3 Block IIA and Aegis BMD 5.1 will further extend Aegis BMDs range capability by capitalizing on globally-deployed BMDS sensor assets. The certification and deployment will take place by FY 2018.

BMD Systems Engineering:

Missile Defense Agency (MDA) Systems Engineering integrates element development and Integrated Master Test Plan (IMTP) work to optimize the capability of the BMDS. Modeling and simulation (M&S) activities support all phases of Aegis BMD`s development, including development of Aegis Weapon System (AWS) and SM-3 variants, flight test missions, ground tests, war games, exercises, and performance assessment. Models and simulations are tailored to the specific need of a component in its current phase of development, ranging from low-to-medium fidelity analysis supporting concept definition studies, to high-fidelity models used to support engineering development, or testing and are integrated into the BMD Digital Simulations Architecture.

Proving Missile Defense:

Working with the Services` Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), Missile Defense Agency (MDA) has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, and suitable.

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 0603892C: <i>AEGIS BMD</i>
---	---

As part of the Agency's rigorous test program, System Pre-Flight predictions provide confidence in test execution by predicting element performance and exercising element interfaces. System Post Flight Reconstruction replicates the Ballistic Missile Defense System (BMDS) configuration and actual environmental conditions and target dynamics observed in flight to anchor modeling and simulation results. Testing includes SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor.

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate data is collected to support Verification, Validation, and Accreditation (VV&A) for Missile Defense Modeling and Simulation (M&S).

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	988.928	992.407	960.870	-	960.870
Current President's Budget	1,139.019	992.407	937.056	-	937.056
Total Adjustments	150.091	0.000	-23.814	-	-23.814
• 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	150.091	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	-23.814	-	-23.814

Change Summary Explanation

FY 2014 funding was adjusted to align with current 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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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
MD09: <i>Aegis BMD</i>	3,942.817	1,094.395	775.978	726.109	-	726.109	777.584	872.289	646.214	593.369	Continuing	Continuing
Quantity of RDT&E Articles		4	4	1		1	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

Aegis Ballistic Missile Defense (BMD) continues development of a sea-based BMD capability in project MD09, in support of the Missile Defense Agency's mission to protect the homeland, deployed forces, friends and allies from ballistic missile threats of all ranges and in all stages of flight. Aegis BMD efforts will primarily fall into two categories of BMD initiatives:

Enhance Missile Defense to Defend Deployed Forces, Allies and Friends Against Theater Threats:

- By FY 2014 Aegis BMD 4.0 will improve radar tracking accuracy and Radio Frequency (RF) discrimination and increased raid capacity using Aegis BMD Signal Processor (BSP).
- SM-3 Block IB improved kinetic warhead by FY 2014.
- Aegis BMD 5.0 integrates BMD capability into the Navy's Aegis Modernization Program by FY 2015.
- Aegis BMD 5.0 Capability Upgrade (CU) expands threat set and further increased the raid size, adds improved terminal defense capability by FY 2015.
- By FY 2018 the Aegis BMD 5.1 implementation of Standard Missile-3 (SM-3) Block IIA tactical capability will take place.
- BMD shipset installations aboard US Navy Cruisers and Destroyers are an ongoing effort.
- By FY 2014 the adaptation of Aegis BMD for use on land (Aegis Ashore) will take place.

Prove Missile Defense Works:

- Aegis BMD element-level testing.
- Participation in BMD System ground tests.
- Element Modeling & Simulation.

Aegis Ballistic Missile Defense (BMD) 3.6.1 provides midcourse defense against Short Range Ballistic missile (SRBM), Medium Range Ballistic Missile (MRBM) and Intermediate Range Ballistic Missile (IRBMs) using the Standard Missile (SM-3) Block IA and terminal defense against SRBM with SM-2 Block IV Missile. This configuration is deployed today supporting Combatant Commanders (COCOM) needs. It is a key element of U.S. regional missile defenses for the defense of deployed

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

forces, allies, and partners in Europe, the Asia-Pacific, and the Middle East. Planned efforts include increasing the number of ships to 24 and continued integration with other elements of the Ballistic Missile Defense System (BMDS.)

Aegis BMD 4.0 and SM-3 Blk IB address more sophisticated and evolving threats. The ship receives a new signal processor that increases radar resolution to provide more accurate and discriminated track information and triples the possible number of simultaneous ballistic missile engagements over Aegis BMD 3.6.1. The SM-3 receives a new kinetic warhead that includes a 2 color seeker, throttleable engine and upgraded signal processor.

Other capability enhancements include functionality to support BMDS integrated Builds C and D:

- Improvements in BMDS Command and Command and Control, Battle Management and Communications (C2BMC) to ensure future BMDS remote sensor enhancements and the resulting discrimination capabilities are able to be communicated, correlated, and acted upon. Improved engagement coordination capability with Terminal High Altitude Area Defense (THAAD) and Patriot to conserve upper tier missiles, including Patriot upper tier debris mitigation.
- Analysis for planned upgrades to the SM-3 missile to expand battlespace and improve discrimination, divert, and probability of mission success.
- Supports BMDS Integrated Build C functionality: In Aegis BMD, this functionality includes deliberate and crisis Ballistic Missile Defense planning, Warfighter situational awareness, and the initial capability to control Regional BMD engagement between local assets and near-term improvements to threat discrimination.
- Supports Integrated BMDS Build D functionality: In Aegis BMD, this functionality includes the Aegis BMD System (4.0 and Standard Missile (SM-3 Block IB)) that provides significant improvements to both Radio Frequency (RF) and Infrared (IR) discrimination allowing for engagement of complex threats. Additional improvements to Aegis increase its ability to launch SM-3 interceptors on BMD System remote sensor data and improve Aegis coordination with the THAAD and Patriot weapon systems.

-Approved additions to integrated Build D support initial Aegis BMD Ashore with control of engagement debris and refinements to BMD engagement coordination.

Aegis BMD 5.0 will integrate Aegis BMD 4.0 capability into the Navy-developed Open Architecture (OA) computing environment. This change is necessary for Aegis BMD to remain compatible with Navy as Navy ship modernization plans are executed. This change will improve human-systems interface through display enhancements and eliminate the need for a separate computing system specific to the BMD mission. This will also enable more ships to serve as candidates for the BMD mission. Aegis BMD 5.0 will support the BMDS Integrated Build D and provide the basis for Aegis Ashore.

Aegis BMD 5.0 Capability Upgrade (CU) will enhance Aegis BMD 5.0 by restoring the terminal defense layer with the SM-6, increasing the maximum number of SM-3's inflight simultaneously and expanding the threat set to include those for Phased Adaptive Approach (PAA) Phase II for defense of Europe and support of deployed forces, friends and allies and to increase this capability by delivering evolutionary improvements as part of (BMDS) upgrades.

Aegis Ballistic Missile Defense (BMD) 5.1 will integrate the Standard Missile-3 (SM-3) Block IIA missile and provide improved terminal defense capability. It will also incorporate the following Weapon System improvements:

- An Aegis BMD module in Navy's Open Architecture computer program.
- Defeat a wide variety of ballistic missiles: Short Range Ballistic Missile (SRBMs), Medium Range Ballistic Missile (MRBMs), and Intermediate Range Ballistic Missile (IRBMs).

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

- Increased battlespace with the SM-3 Block IIA.
- Engage on Remote (EoR) engagements allows use active and passive off board sensor information to launch and guide the SM-3 to final intercept. EoR engagements will use more of the SM-3's kinematic envelope expanding battlespace, will increase the theoretical number of threats engaged over previous baselines both matching communications upgrades and make the overall architecture more resilient to adversary attempts to penetrate the Ballistic Missile Defense System (BMDS.)
- Enhanced conventional discrimination.
- Increased BMDS interoperability.
- Enhanced Sea-Based Terminal capability.

The Standard Missile-3 Block IIB (SM-3 IIB) is considered a key element to expanding the battle space by adding an additional layer to our homeland defense against Intercontinental Ballistic Missiles (ICBM) from the Middle East. The goals of the program are to develop an operational, hit-to-kill missile fielded in the 2024 timeframe to counter first generation ICBMs targeted at the U.S. homeland early in-flight. It will serve as the first tier of the layered defense of the U.S. Homeland. The SM-3 IIB missile will also provide a large defended area against regional, intermediate range ballistic missiles. The SM-3 IIB will be integrated into the Aegis Ballistic Missile Defense (BMD) 5.1 Weapon System using Engage on Remote, leveraging the BMD distributed Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) network. The near term goal of the program is to reduce technical and programmatic risk by developing and testing key component technologies that increase the speed of the missile and provide flexible energy management to engage targeted ballistic missiles early in their trajectory. Missile Defense Agency (MDA) is also working with three industry teams to evaluate a wide range of missile concepts, up to 27" in diameter, while balancing technical, cost and performance parameters. The SM-3 IIB contributions to the Prioritized Capability List include: Joint Engagement Sequence (aerospace) (raid capacity), and Prevent Attack (advanced ballistic missile threats).

Aegis BMD supports an autonomous engagement against SRBMs and MRBMs without requiring external cueing. It supports an engagement against SRBMs and MRBMs using data from other BMDS elements and external sensors. Aegis BMD will also provide target track data to support Ground-based Interceptor Launch and Engagement against Intercontinental Ballistic Missiles (ICBMs).

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

	FY 2012	FY 2013	FY 2014
<p>Title: Aegis Ballistic Missile Defense (BMD) 4.0 Development</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Prepared and delivered certification safety report. - Prepared and delivered letter data package for FTM-16E2A, FTM-18 and FTM-19. - Received Weapon Systems Explosive Safety Review Board (WSESRB) concurrence to deploy Aegis 4.0.1.0, 4.0.1.1, and 4.0.2. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Conduct Threat Adaptation Update. 	<p>84.969</p> <p>0</p>	<p>115.367</p> <p>0</p>	<p>106.550</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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Update 4.0 Computer Program Based upon flight test results. - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Continue Command and Control Processor (C2P)/Common Data Link Monitoring System (CDLMS) V3.7 installations. - Continue deployment of Global Command and Control System Maritime (GCCS-M) 4.0.3.5 on BMD platforms. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Prepare for and conduct Ballistic Missile Defense System (BMDS) Flight and Ground Test events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule. <p>The decrease from FY 2013 to FY 2014, is due to Aegis BMD 4.0 nearing the end of the development phase and transitioning to fielding.</p>			
<p>Title: Aegis Ballistic Missile Defense (BMD) 5.0 Development</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted Multi-Mission Signal Processor Radar Exercise. - Conducted the Test Readiness Review (TRR) #1, as part of the roadmap to demo in anticipation of Aegis Modernization (ACB-12). - Prepared for Mission Readiness Assessment #1. - Prepared for Aegis Modernization (ACB-12) demonstration, which is an Anti-Air Warfare (AAW) and BMD functionality test. - Completed BMD integration into ACB-12 to include full BMD functionality. - Conducted testing to prove full functionality of BMD components. - Conducted Prime Item Development Specs (PIDS)/Critical Item Development Specs (CIDS) testing. Starting system level specification verification. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Conduct testing to verify full functionality of BMD Components. - Continue Prime Item Description Specs (PIDS)/Critical Items Description Specs (CIDS) testing. - Continue System Level Specification Verification. - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Conduct a Mission Readiness Assessment (MRA). - Conduct BMDS Flight and Ground Test events as reflected in the IMTP and the R-4 Exhibit. 	185.609 0	239.912 0	153.777 0

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

FY 2014 decrease is due to Removal of Baseline 4 Cruiser`s, consolidation of 5.0/5.0 Capability Upgrade (CU) into one baseline, and current phase of program development.

Title: Aegis Ballistic Missile Defense (BMD) 5.1 Development	86.718	183.553	239.357
Articles:	0	0	0

Description: See Description below.

- FY 2012 Accomplishments:**
- Conducted System Requirements Review (SRR) #2 to finalize Aegis BMD 5.1 Baseline Element Capability Specification (ECS) requirements
 - Continued systems engineering and analysis to develop the Aegis BMD 5.1 A-Spec, B1/B2-Spec, B5-Spec, and Interface requirements.
 - Conducted System Design Review (SDR) #1 to finalize the Baseline A-Spec requirements needed to support the BMD 5.1 SM-3 Cooperative Development (SCD) configuration for the SCD Flight Tests.
 - Conducted preparations for SDR #2 which will finalize the Baseline A-Spec requirements for the BMD 5.1 Capability to include EoR and BMDS integration, and will finalize the B1/B2-Spec requirements needed to support the BMD 5.1 SCD configuration for the SCD Flight Tests.
 - Continued analysis and design of AWS/Vertical Launch System (VLS)/Missile interfaces and specifications.
 - Prepared for and conducted VLS SRR.
 - Conducted VLS systems engineering, analysis, and design activities in support of VLS SDR.
 - Continued analysis and systems engineering for development of Aegis BMD 5.1 Engage on Remote (EoR), and BMDS integration.
 - Conducted system-level performance analysis in preparation for the SCD Critical design Review (CDR), using updated surrogate BMD 5.1 AWS data.
 - Prepared for and conducted VLS SDR.

- FY 2013 Plans:**
- Continue systems engineering and analysis to complete the Aegis BMD 5.1 A-Spec.
 - Complete preparation for and execute BMD 5.1 SDR #2 complete SDR #2 data package and conduct Navy Review Team (NRT) review.
 - Initiate and systems engineering and analysis to develop the Aegis BMD 5.1 B1, B2, and B5-Specs
 - Initiate preparation for the BMD 5.1 PDR.
 - Continue analysis and systems engineering for development of Aegis BMD 5.1 EoR, and BMDS integration.
 - Complete system-level performance analysis in preparation for the SCD CDR, using updated surrogate BMD 5.1 AWS data.

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Complete analysis and design of AWS/VLS/Missile interfaces and specifications. - Complete Vertical launch system (VLS) systems engineering, analysis, and design activities in support of VLS Preliminary Design Review (PDR). - Prepare for and conduct VLS PDR. - Initiate VLS systems engineering, analysis, and design activities in support of VLS CDR. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Complete preparations for Preliminary Design Review (PDR) which will finalize the Baseline Prime Item Development Specifications (PIDS/B1) and Critical Item Development Specifications (CIDS/B2) requirements for the BMD 5.1 Capability to include Engage on Remote (EoR) and BMDS integration, and will finalize the Computer Program Requirements Specifications (CPRS/B5) needed to support the BMD 5.1 Standard Missile-3 Cooperative Development (SCD) configuration for the SCD Flight Tests. - Conduct BMD 5.1 Preliminary Design Review (PDR) complete PDR data package and conduct Navy Review Team (NRT) review. - Commence software development for the BMD 5.1 Standard Missile-3 Cooperative Development Program (SCD) configuration for the SCD Flight Tests. - Conduct preparations for Critical Design Review (CDR) which will finalize the Baseline B5-Spec requirements for the of Ballistic Missile Defense (BMD) 5.1 Capability to include EoR and BMDS integration.-Complete development of BMD 5.1 ECS and A-Spec requirements needed to adapt BMD 5.1 for the Aegis Ashore configuration. - Conduct development of BMD 5.1 B1/B2-Spec requirements needed to adapt BMD 5.1 for the Aegis Ashore configuration. - Prepare for and conduct Vertical Launch System Critical Design Review. <p>FY 2014 increase is due to initiating software development and test for Organic and Launch on Remote (LoR), and completing critical detailed design for Engage on Remote (EoR).</p>				
<p>Title: Standard Missile-3 (SM-3) Block IB Development</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Began increasing production and tooling for production line rate increase from 2 to 4 per month. - Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule, including successful lethal intercept of target with a SM-3 IB missile in FTM-16E2A and FTM-18. - Completed additional SM-3 Blk IB ground test (Hazard Assessment Test (HAT), Quals, and Design Verification Testing (DVT)). 		259.003 0	79.790 0	45.449 0

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>- Completed Manufacturing Readiness Review for the SM-3 IB Missile.</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Continue production line rate increase from 2 to 4 per month. - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Complete IB Update. - Support Production decisions for Lot #2 and beyond (4Q FY 2013). - Conduct Aegis BMD Flight Test Mission including SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Complete IB Update for 5.0 Capability Upgrade (CU) and other threats. - Prepare for and conduct Ballistic Missile Defense System (BMDS) flight test as reflected in the Integrated Master Test Plan (IMTP) and the exhibit R-4 schedule. <p>The decrease from FY 2013 to FY 2014, is due to SM-3 Block IB nearing the end of the development phase and transitioning to fielding.</p>				
<p>Title: Aegis Ballistic Missile Defense (BMD) Testing</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Supported Aegis BMD-specific modeling and simulation of predicted system performance for testing. - Completed test planning for FY 2013 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test. - Participated in Target of Opportunity (TOO) testing. - Prepared for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Participated in BMD special technology experiments. <p>FY 2013 Plans: Funding moved to MT09.</p> <p>FY 2014 Plans: N/A</p>		72.922 0	0.000 0	0.000 0
Title: Fielding - Aegis Weapon System (AWS)		113.930	86.648	108.400

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Articles:		4	4	1
Description: See Description below.				
FY 2012 Accomplishments: - Installed one (1) BMD 3.6.1 shipset. - Procured two (2) BMD 4.0 equipped shipsets. - Installed two (2) BMD 4.0 equipped shipsets. - Procured two (2) BMD 5.0 equipped shipsets. - Installed one (1) BMD 5.0 equipped shipset.				
FY 2013 Plans: - Install one (1) BMD 3.6.1 shipset. - Procure two (2) BMD 4.0.1 shipsets. - Install two (2) BMD 4.0.1 shipsets. - Procure two (2) BMD 5.0 shipsets. - Install two (2) BMD 5.0 shipsets.				
FY 2014 Plans: - Install three (3) Ballistic Missile Defense (BMD) 4.0 shipsets. - Purchase one (1) BMD 5.1 shipset. - Install one (1) BMD 5.0 shipset.				
Title: SM-3 Manufacturing		81.453	0.000	0.000
Articles:		0	0	0
Description: See Description below.				
FY 2012 Accomplishments: - Delivered seven (7) of twenty four (24) SM-3 Blk IB missiles. - Continued manufacturing the remainder of twenty four (24) SM-3 Blk IB missiles that began in FY 2011 for delivery in FY 2013.				
FY 2013 Plans: Deliver remaining nine (9) of twenty-four (24) SM-3 Blk-IB missiles that began in FY 2011.				
FY 2014 Plans: N/A				
Title: SM-3 Production Support		46.039	0.000	0.000

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<i>Articles:</i>		0	0	0
Description: See Description below.				
FY 2012 Accomplishments: - Continued to monitor performance of SM-3 Blk IA & IB. - Monitored obsolete material replacement effort. - Designed alternatives for obsolete material replacement efforts. - Conducted ground tests for lot qualification of components. - Prepared for and conduct BMDs Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Provided in-service engineering support for SM-3 Blk IA missiles.				
FY 2013 Plans: Funds for SM-3 Production Support are reported in Program Element 0208866C.				
FY 2014 Plans: N/A				
Title: Fleet Integration		11.111	4.967	5.931
<i>Articles:</i>		0	0	0
Description: See Description below.				
FY 2012 Accomplishments: - Provided leadership and engineering/technical support to conduct Aegis Combat Systems Assessments, i.e. Quality Assurance Program. - Provided In-service Engineering support to Aegis BMD: Weapon System. - Responded to Fleet issues related to Aegis BMD operations and BMD events. - Provided reach back analytical support to Combat Commanders (COCOMs) for real world operations. - Provided maintenance and update of Force on Force Modeling and Simulation. - Identified and resolved BMD specific material issues with maintenance, engineering and operability. - Responded to BMD readiness issues with maintenance, engineering and operability. - Responded to BMD readiness issues related to Aegis BMD capability, introduction, and employment. - Provided engineering/technical guidance for issues related to the training continuum supporting Aegis BMD capabilities. - Responded to Global Force Management planning initiatives for the allocation of Aegis BMD assets. - Provided logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD: Weapon System.				

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>- Provided training simulation infrastructure and scenarios supporting introduction of additional Phased Adaptive Approach threats and introduction of Aegis BMD 4.0.1 Baseline.</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Provide In-service Engineering support to Aegis BMD: Weapon System and (VLS). - Provide leadership and engineering/technical support to conduct Aegis Combat Systems Assessments. - Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events. - Provide reach back analytical support to COCOMs for real world operations. - Provide maintenance and update of Force on Force Modeling and Simulation. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Provide leadership and engineering/technical support to conduct Aegis BMD Combat Systems Readiness Assessment - Provide In-service Engineering support to Aegis Ballistic Missile Defense (ABMD) Weapon system and Vertical Launch System (VLS) - Identify and resolve BMD specific material issues with maintenance, engineering and operability. - Respond to BMD readiness issues with maintenance, engineering and operability. - Respond to BMD readiness issues related to Aegis BMD capability, introduction, and employment. - Provide Management and oversight of ABMD Sustainment program. <p>The FY 2013 to FY 2014 increase is due to an increase in the number of operational SM-3s and BMD capable Ships.</p>				
<p>Title: Modeling & Simulation HWIL Framework, Simulations, Models</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Completed deployment and integration of BMDS Hardware-In-The-Loop (HWIL) stimulation framework Single Stimulation Framework (SSF) with Elements for BMDS ground, flight tests and training. - Implemented upgrades to the BMDS HWIL SSF that support execution of increasingly more complex BMDS ground test campaigns that collect data to assess reliability and identify necessary reliability improvements. - Demonstrated the SSF successfully transitioned legacy Missile Defense System Exerciser (MDSE) HWIL framework capabilities to support COCOM and MDA exercises. - Provided SSF support to HWIL Post Flight Reconstruction activities. - Conducted BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos. - Provided for SSF field sustainment, maintenance and product support. 		<p>Articles:</p> <p>50.709 0</p>	<p>38.947 0</p>	<p>39.444 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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Integrated the SSF with updated MDA and non-MDA Element HWIL and digital models (e.g., Open system architecture Models (OSMs)), as the capabilities are integrated into the BMDS architecture. - Continued Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation. - Began deployment and integration of SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. - Began deployment and installation of SSF software on necessary hardware platforms (funded by MDA/DTR) to support a 2nd parallel test string (Ground Test assets only). - Demonstrated initial Open Architecture (OA) redesign capabilities. - Demonstrated improved Instantaneous Object Processing capabilities. - Began development of Real Time, scaled Real Time, non Real Time operational modes. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Demonstrate the SSF has incorporated MDSE framework capabilities to support MDA exercises. - Provide Single Stimulation Framework (SSF) support to Post Flight Reconstruction activities. - Continue integration of the SSF with the DSA into the OSF. - Continue Optimistic Sensor Model (OSM) integration into SSF. - Provide for SSF sustainment, maintenance and product support. - Integrate the BMDS HWIL SSF with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture. - Continue Event Execution Control System (EECS) capability development for the BMDS Concurrent Test, Training and Operations (CTTO) implementation. - Begin deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. - Begin installation of BMDS HWIL SSF software capability (funded by MDA/DESH) and necessary hardware/ maintenance (funded by MDA/DTR) to support a 2nd parallel test string (Ground Test assets only). - Demonstrate initial OA redesign capabilities. - Demonstrate improved Instantaneous Object Processing capabilities. - Begin development of Real Time, scaled Real Time, non Real Time operational modes. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Maintain Single Stimulation Framework (SSF) support to Post Flight Reconstruction activities. - Continue Optimistic Sensor Model (OSM) integration into SSF. - Continue deployment and integration of BMDS Hardware-in-the-loop (HWIL) SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. - Continue integration of the SSF with the DSA into the Objective Simulation Framework (OSF). 			

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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Deliver the OSF Version 1.0 to begin the transition of HWIL capabilities. - Deliver improved debris and phenomenology modeling capabilities to support Aegis 4.0 and future baselines. - Incorporate advanced Modeling and Simulation (M&S) capabilities into the next version of the OSF for Aegis Ballistic Missile Defense (BMD) for tracking, discrimination, engagement and associated upper tier mitigation for Phased Adaptive Approach (PAA) III. - Maintain BMDS HWIL SSF software capability and necessary hardware/ maintenance to support ground testing. - Continue SSF sustainment, maintenance and product support. 				
<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. <p>FY 2013 Plans:</p> <p>Funding moved to MT09.</p> <p>FY 2014 Plans:</p> <p>N/A</p>		53.473 0	0.000 0	0.000 0
<p>Title: Systems Engineering & Integration</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Produced all the threat data required to enable Ballistic Missile Defense System (BMDS) Ground Tests, Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan. - Produced parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach (PAA). - Validated that Ballistic Missile Defense System test targets are threat representative. - Conducted threat systems engineering to support future systems design related to PAA III/IV. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Continue support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development. 		31.822 0	10.307 0	10.491 0

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Continue to produce all the threat data required to enable Ballistic Missile Defense System Ground Tests, Flight Tests, Ballistic Missile Defense System Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan. - Continue to produce parametric threat space and scenario data for Element and Component design and assessment for Ballistic Missile Defense System in accordance to the Phased Adaptive Approach. - Continue to validate that Ballistic Missile Defense System test targets are threat representative. - Continue threat systems engineering work to support future systems design. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development. - Provide threat data required for BMDS Ground Tests, Flight Tests, Performance Assessment, war games and exercises as documented in the BMDS Integrated Master Test Plan. - Continue to produce parametric threat space and scenario data for Element and Component design and assessment for Ballistic. 				
<p>Title: M&S Digital Framework, Simulation, Models</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting various uses: - Performance Assessment Simulation (utilizing Element-provided high-resolution models) to support future full-envelope BMDS Performance Assessment events. - Conducted and performed Digital Simulation (utilizing Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting various uses: - Performance Assessment Simulation (utilizing DSA, MDST, and Element-provided high-resolution models) to support full-envelope BMDS - Performance Assessment events. - Real-time Digital Simulation (utilizing DSA, MDST, and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaign. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Incorporate advanced Modeling and Simulation (M&S) capabilities into the next version of the Objective Simulation Framework (OSF) for Aegis Ballistic Missile Defense (BMD) for tracking, discrimination, engagement and associated upper tier mitigation to satisfy Phased Adaptive Approach (PAA) Phase II/III needs in BMDS Performance Assessment test venues. 		<p>2.112</p> <p>Articles: 0</p>	<p>4.916</p> <p>0</p>	<p>4.983</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 0603892C: <i>AEGIS BMD</i>		PROJECT MD09: <i>Aegis BMD</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Begin the transition of real-time digital simulations to the OSF to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaigns.				
Title: M&S VV&A and Test Operations		14.525	11.571	11.727
Description: See Description below.		0	0	0
FY 2012 Accomplishments:				
<ul style="list-style-type: none"> - Provided integrated system level Verification, Validation and Accreditation (VV&A) of BMDS Model and Simulation (M&S) events, to include Technical Assessment, Performance Assessment, Ground Tests that support BMDS fielding decisions, and COCOM exercises and training. - Developed an integrated VV&A event Plans and Reports for events as reflected in the IMTP and the Exhibit R-4 schedule. - Planned and specified HWIL system post-flight reconstructions and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level BMDS accreditation perform all system-level VV&A associated with these events as reflected in the IMTP and the Exhibit R-4 schedule. - Worked closely with Elements, Test Community, System Engineering, and Operational Test Agency (OTA) to ensure M&S for each event meets intended uses and objectives, and has proper VV&A documentation and evidence, to include benchmarking/anchoring pedigree. - Conducted system-level verification and validation of threat trajectory and signature end-to-end environmental implementation is consistent and correct communications and architecture behave properly and interoperability is adequately addressed. - Developed and implemented M&S standards consistent with industry best practices. - Conducted annual review of BMDS Element VV&A programs. - Developed, implemented and controlled configuration of web-based problem reporting system to capture M&S anomalies and incorporate corrections into requirements process in order to guarantee and measure M&S improvement. - Led BMDS VV&A working group to improve VV&A operations and ultimately improve creditability of predicted M&S BMDS performance. - Developed and implemented metrics for system-level M&S to increase efficiencies and effectiveness. - Ensured that individual BMDS elements properly conducted VV&A for their models. 				
FY 2013 Plans:				
<ul style="list-style-type: none"> - Continue to demonstrate initial OA redesign capabilities and improved Instantaneous Object Processing capabilities. - Continue support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development. 				
FY 2014 Plans:				

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide integrated VV&A of Missile Defense Agency (MDA) M&S at the system level for specific events, to include Technical Assessment, Performance Assessment, Ground Tests that support Ballistic Missile Defense System (BMDS) fielding decisions, and tier one Combatant Commanders (COCOM) exercises. - Develop integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule. - Conduct specified system post-flight reconstructions and pre-mission testing events so as to optimize the body of evidence and analysis supporting system-level Ballistic Missile Defense System (BMDS) accreditation perform all system-level VV&A associated with these events as reflected in the IMTP and the Exhibit R-4 schedule. - Conduct system-level verification and validation of threat trajectory and signature end-to-end environmental implementation is consistent and correct communications and architecture behave properly and interoperability is adequately addressed. 			
Accomplishments/Planned Programs Subtotals	1,094.395	775.978	726.109

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
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	457.529	420.630	308.522		308.522	230.466	128.743	41.014	0.000	0.000	1,586.904

Remarks

D. Acquisition Strategy
 The Aegis Ballistic Missile Defense (BMD) element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall Ballistic Missile Defense System (BMDS) capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Aegis BMD program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the Standard Missile-3 (SM-3) missile and the Aegis BMD Weapon System, respectively.

The Modeling & Simulation (M&S) acquisition strategy utilizes full and open competition to develop, acquire and deliver the integrated architectures/frameworks, as well as develop and deliver models of AEGIS systems. The Digital and Hardware in the loop (HWIL) product centers integrate the suite of M&S into a composite simulation capability, all based on an open architecture. M&S achieves this end-state via close collaboration between its integrating contractor teams (Digital and HWIL) and those of the AEGIS BMD prime contractors, with additional technical standards and engineering oversight provided by Federally Funded Research and Development Centers and University Affiliated Research Centers.

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev.	MIPR	NAVSEA:VA	0.000	8.239		2.662	Oct 2012	0.000		-		0.000	0.000	10.901	0.000
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - 201112203132279	MIPR	CORONA:CA	0.000	0.000		2.000	Oct 2012	1.479	Oct 2013	-		1.479	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09	MIPR	NSWC/DD:DAHLGREN, VA	59.679	3.501		3.979	Oct 2012	5.810	Oct 2013	-		5.810	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09 - 20117142293189	MIPR	NSWC/PHD:PT. HUENEME, CA	9.812	2.036		2.484	Oct 2012	2.165	Oct 2013	-		2.165	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09 - 20117142293191	MIPR	JHU/APL/MD:COLUMBIA, MD	17.906	4.000		10.151	Oct 2012	4.385	Oct 2013	-		4.385	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09 - 20117142293194	MIPR	MDA:VA	10.818	4.491		5.010	Oct 2012	0.000		-		0.000	0.000	20.319	0.000
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09 - 20117142293195	SS/CPIF	LOCKHEED MARTIN:MOORESTOWN NJ	33.432	29.311		60.887	Oct 2012	31.703	Oct 2013	-		31.703	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	1.900	0.043		10.989	Oct 2012	36.411	Oct 2013	-		36.411	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

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
4.0.1 Dev. - MD09 - 20117142293198															
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev. - MD09 - 201171422932	MIPR	AEGIS BMD:DAHLGREN, VA	53.887	17.334		2.000	Oct 2012	0.000		-		0.000	0.000	73.221	0.000
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09	SS/CPIF	LOCKHEED MARTIN:MOORESTOWN NJ	402.901	115.525		111.410	Oct 2012	89.668	Oct 2013	-		89.668	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316263	MIPR	NSWC/DD:DAHLGREN, VA	23.062	22.883		10.208	Oct 2012	11.612	Oct 2013	-		11.612	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316266	MIPR	NSWC/PHD:PT. HUENEME, CA	1.084	1.702		0.366	Oct 2012	1.315	Oct 2013	-		1.315	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316267	MIPR	JHU/APL/MD:COLUMBIA, MD	22.020	5.323		10.199	Oct 2012	10.681	Oct 2013	-		10.681	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 2011714231627	MIPR	MDA:VA	44.594	0.000		52.674	Oct 2012	1.075	Oct 2013	-		1.075	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316272	C/CPAF	RAYTHEON/AZ:TUCSON, AZ	0.030	0.000		0.000		0.875	Oct 2013	-		0.875	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316275	SS/CPAF	RAYTHEON/AZ:TUCSON, AZ	4.000	0.000		5.617	Oct 2012	0.000		-		0.000	0.000	9.617	0.000

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278	MIPR	AEGIS BMD:AZ, VA, CA	0.000	0.000		12.542	Oct 2012	1.273	Oct 2013	-		1.273	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278 - 2012628495024	MIPR	NSWC:CRANE	0.000	0.000		0.000		0.612	Oct 2013	-		0.612	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278 - 20126284950245	MIPR	MITRE:CECOM	0.000	0.665		0.000		1.169	Oct 2013	-		1.169	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278 - 20126284950249	MIPR	Aegis Techrep:VA	0.000	1.079		0.000		0.000		-		0.000	0.000	1.079	0.000
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09	MIPR	AEGIS BMD:AZ, VA, CA	49.605	4.802		0.000		2.465	Nov 2013	-		2.465	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323679	MIPR	MDA:VA	13.705	8.383		0.000		2.864	Nov 2013	-		2.864	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323680	MIPR	NSWC/DD:DAHLGREN, VA	24.949	5.570		16.366	Oct 2012	8.143	Oct 2013	-		8.143	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323684	MIPR	NSWC/PHD:PT HUENEME, CA	1.049	0.000		0.000		1.025	Nov 2013	-		1.025	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323686	MIPR	JHU/APL/ MD:COLUMBIA, MD	20.703	4.741		19.054	Oct 2012	9.929	Oct 2013	-		9.929	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323689	SS/CPAF	LOCKHEED MARTIN:MOORESTOWN, NJ	10.373	48.763		118.008	Oct 2012	150.394	Oct 2013	-		150.394	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323691	SS/CPAF	RAYTHEON/ AZ:TUCSON, AZ	0.210	0.000		0.000		4.326	Oct 2013	-		4.326	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20126284501509	MIPR	SPAWAR:-	0.000	2.629		0.000		4.956	Nov 2013	-		4.956	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09	SS/CPAF	Raytheon:Tucson, AZ	671.572	207.572		55.319	Oct 2012	28.175	Oct 2013	-		28.175	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332255	MIPR	NSWC/DD:Dahlgren, VA	25.232	7.568		2.500	Oct 2012	1.695	Oct 2013	-		1.695	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332256	MIPR	JHU/APL/ MD:Columbia, MD	33.847	1.791		2.700	Oct 2012	3.728	Oct 2013	-		3.728	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332259	MIPR	NSWC/PHD:Port Huneme, CA	8.357	2.772		1.120	Oct 2012	1.356	Oct 2013	-		1.356	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332261	MIPR	NSWC Carderock:MD	15.020	0.590		1.993	Oct 2012	0.678	Oct 2013	-		0.678	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332264	MIPR	AEGIS BMD:VA, AZ, CA	66.372	6.352		0.000		0.000		-		0.000	0.000	72.724	0.000

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Aegis Ballistic Missile Defense (BMD) Testing - MD09	MIPR	NSWCDD:DAHLGREN, VA	3.621	0.425		0.000		0.000		-		0.000	0.000	4.046	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341695	MIPR	NSWC/PHD:PT. HUENEME, CA	2.853	0.000		0.000		0.000		-		0.000	0.000	2.853	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341698	MIPR	JHU/APL/ MD:COLUMBIA, MD	7.971	3.250		0.000		0.000		-		0.000	0.000	11.221	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341702	MIPR	NAVSEA:VA	4.181	33.798		0.000		0.000		-		0.000	0.000	37.979	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341705	MIPR	SPAWAR:SAN DIEGO, CA	1.016	0.000		0.000		0.000		-		0.000	0.000	1.016	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341708	MIPR	Corona:Corona, CA	1.383	0.000		0.000		0.000		-		0.000	0.000	1.383	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341709	C/CPAF	Lockheed Martin:Moorestown, NJ	0.000	0.825		0.000		0.000		-		0.000	0.000	0.825	0.000
Aegis Ballistic Missile Defense (BMD) Testing - MD09 - 20117142341713	MIPR	Aegis BMD:VA, AZ, CA	0.000	18.920		0.000		0.000		-		0.000	0.000	18.920	0.000
Fielding - Aegis Weapon System (AWS) - MD09	MIPR	MDA:Arlington Va	0.000	0.000		0.000		3.730	Nov 2013	-		3.730	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 -	SS/CPIF	Lockheed Martin:Moorestown, NJ	145.849	32.540		58.584	Oct 2012	75.681	Oct 2013	-		75.681	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347879	MIPR	NSWC/PHD:Port Hueneme, CA	30.171	0.000		9.034	Oct 2012	12.857	Oct 2013	-		12.857	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347888	MIPR	NSWC/DD:Dahlgren, VA	24.995	1.432		1.500	Oct 2012	2.135	Oct 2013	-		2.135	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347891	C/CPAF	Raytheon:Washington, DC	3.800	8.387		2.130	Oct 2012	3.031	Oct 2013	-		3.031	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347892	MIPR	PEO IWS:Minneapolis, MN	2.300	32.800		4.600	Oct 2012	6.547	Oct 2013	-		6.547	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347895	MIPR	AEGIS TECHREP:Moorestown, NJ	1.700	1.600		1.700	Oct 2012	2.419	Oct 2013	-		2.419	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - 20117142347898	MIPR	NAVSEA:VA	72.377	37.171		9.100	Oct 2012	2.000	Oct 2013	-		2.000	Continuing	Continuing	Continuing
SM-3 Manufacturing - SM-3 BLK IB MANUFACTURING - MD09	SS/CPAF	Raytheon:Tucson, AZ	255.652	81.453		0.000		0.000		-		0.000	0.000	337.105	0.000
SM-3 Manufacturing - SM-3 BLK IB MANUFACTURING - MD09 - 20117142352564	MIPR	NSWCDD:Port Hueneme, CA	4.001	0.000		0.000		0.000		-		0.000	0.000	4.001	0.000
SM-3 Manufacturing - SM-3 BLK IB MANUFACTURING - MD09 - 20117142352566	MIPR	NSWC Carderock:MD	11.760	0.000		0.000		0.000		-		0.000	0.000	11.760	0.000
SM-3 Production Support - CANISTERS - MD09	MIPR	PEO IWS:Minneapolis, MN	15.800	0.000		0.000		0.000		-		0.000	0.000	15.800	0.000
SM-3 Production Support - PRODUCTION ENGINEERING - MD09	SS/CPAF	Raytheon:Tucson, AZ	29.102	46.039		0.000		0.000		-		0.000	0.000	75.141	0.000

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Fleet Integration - 20098185191945	MIPR	NSWC/PHD:Port Hueneme, CA	15.027	1.588		1.456	Oct 2012	1.663	Nov 2013	-		1.663	Continuing	Continuing	Continuing
Fleet Integration - MD09	MIPR	SMDC/ARSTRST:Huntsville, AL	8.395	0.228		0.118	Oct 2012	0.144	Nov 2013	-		0.144	Continuing	Continuing	Continuing
Fleet Integration - MD09 -	SS/CPHF	Lockheed Martin:Moorestown, NJ	44.765	1.734		0.000		0.000		-		0.000	0.000	46.499	0.000
Fleet Integration - MD09 - 20117142371309	MIPR	NSWC/DD:Dahlgren, VA	4.944	0.000		0.000		0.000		-		0.000	0.000	4.944	0.000
Fleet Integration - MD09 - 20117142371317	MIPR	CSCS:Dahlgren, VA	8.670	1.696		1.217	Oct 2012	1.426	Nov 2013	-		1.426	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 20117142371318	MIPR	JHU/APL/MD:Columbia, MD	3.299	1.882		0.816	Oct 2012	0.987	Nov 2013	-		0.987	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2011714237132	MIPR	NSWC/DD:Dahlgren, VA	10.819	2.947		1.360	Oct 2012	1.600	Nov 2013	-		1.600	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2012723031274	MIPR	MDA:VA	1.036	1.036		0.000		0.111	Nov 2013	-		0.111	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - DSA/SSF Integration - MD09	C/CPAF	Boeing:AL	21.506	0.000		0.000		0.000		-		0.000	0.000	21.506	0.000
Modeling & Simulation HWIL Framework, Simulations, Models - Single Stimulation Framework & Objective Simulation Framework, Procure, Install, Test - MD09	C/CPAF	Boeing:AL	100.671	50.709		38.947	Oct 2012	39.444	Nov 2013	-		39.444	Continuing	Continuing	Continuing
Systems Engineering & Integration - CSS - MD09	C/CPFF	CSC:VA	7.811	0.000		1.546	Oct 2012	1.573	Nov 2013	-		1.573	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Systems Engineering & Integration - CSS - MD09 - 20117142392773	C/CPFF	Cobham:CA	6.660	0.000		1.031	Oct 2012	1.050	Nov 2013	-		1.050	Continuing	Continuing	Continuing
Systems Engineering & Integration - Industry - MD09	C/CPAF	Boeing:VA	12.117	0.000		5.154	Oct 2012	5.245	Nov 2013	-		5.245	Continuing	Continuing	Continuing
Systems Engineering & Integration - SEI&T - MD09	MIPR	MDA:ARLINGTON, VA	0.000	31.822		2.576	Oct 2012	2.623	Nov 2013	-		2.623	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Architecture - MD09	C/CPAF	Northrop Grumman:CO	8.421	2.112		4.916	Oct 2012	4.983	Nov 2013	-		4.983	Continuing	Continuing	Continuing
Subtotal			3,198.792	912.059		666.023		589.216		0.000		589.216			

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			
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - 20098184410811	C/CPFF	Gryphon:Dahlgren, VA	3.801	0.215		0.000		0.000		-		0.000	0.000	4.016	0.000
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09	MIPR	MDA MIDAESS:Arlington, VA	0.000	0.000		5.737	Oct 2012	10.824	Oct 2013	-		10.824	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 -	MIPR	Dahlgren:Dahlgren, VA	4.817	0.000		0.000		1.203	Nov 2013	-		1.203	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 0	MIPR	MDA:Arlington, VA	36.244	2.132		4.222	Oct 2012	5.616	Oct 2013	-		5.616	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142431989	MIPR	NAVSEA:Washington, DC	17.962	1.468		2.789	Oct 2012	2.920	Oct 2013	-		2.920	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142431992	C/CPFF	GDIT:Dahlgren, VA	72.818	3.165		0.000		0.000		-		0.000	0.000	75.983	0.000
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142431995	C/CPFF	Paradigm:Dahlgren, VA	17.821	1.252		0.000		0.000		-		0.000	0.000	19.073	0.000
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142432002	C/CPIF	Lockheed Martin:Arlington, VA	2.006	0.000		0.622	Oct 2012	0.293	Nov 2013	-		0.293	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142432014	C/CPAF	Raytheon:Arlington, VA	1.960	0.000		0.536	Oct 2012	0.274	Nov 2013	-		0.274	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142432019	MIPR	Aegis BMD:Dahlgren, VA	2.628	0.520		0.487	Oct 2012	0.328	Nov 2013	-		0.328	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 20117142432022	MIPR	MDA :Arlington, VA	17.000	7.262		0.812	Oct 2012	2.734	Nov 2013	-		2.734	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.0 Development - BMD 4.0.1 Dev - MD09 - 2012722816284	MIPR	JHU/APL:Columbia MD	0.000	0.000		0.000		0.405	Nov 2013	-		0.405	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09	MIPR	MDA:Arlington, VA	12.050	6.232		8.978	Oct 2012	8.105	Oct 2013	-		8.105	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 -	MIPR	JHU/APL:Columbia MD	0.000	0.000		0.000		0.584	Nov 2013	-		0.584	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454161	MIPR	NAVSEA:Washington, DC	7.535	3.590		6.508	Oct 2012	4.214	Oct 2013	-		4.214	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454164	C/CPFF	GDIT:Dahlgren, VA	8.921	8.488		0.000		0.000		-		0.000	0.000	17.409	0.000
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454167	C/CPFF	Paradigm:Dahlgren, VA	6.829	2.857		0.000		0.000		-		0.000	0.000	9.686	0.000
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 2011714245417	C/CPFF	Gryphon:Dahlgren, VA	1.394	0.000		0.000		0.000		-		0.000	0.000	1.394	0.000
Aegis Ballistic Missile Defense (BMD) 5.0	MIPR	Dahlgren:Dahlgren, VA	9.022	0.000		0.000		1.736	Nov 2013	-		1.736	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Development - MD09 - 20117142454173															
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454175	C/CPIF	Lockheed Martin:Arlington, VA	0.849	0.000		0.590	Oct 2012	0.423	Nov 2013	-		0.423	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454178	C/CPAF	Raytheon:Arlington, VA	0.287	0.000		0.551	Oct 2012	0.395	Nov 2013	-		0.395	0.000	1.233	0.000
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454181	MIPR	Aegis BMD:Dahlgren, VA	20.595	0.711		1.087	Oct 2012	0.474	Nov 2013	-		0.474	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454184	MIPR	MDA :Arlington, VA	17.000	16.554		0.090	Oct 2012	3.945	Nov 2013	-		3.945	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454188	MIPR	MDA MIDAESS:Arlington, VA	0.000	0.000		19.092	Oct 2012	15.621	Oct 2013	-		15.621	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09	MIPR	MDA:Arlington, VA	1.547	1.836		9.007	Oct 2012	12.615	Oct 2013	-		12.615	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 2011714247033	MIPR	NAVSEA:Washington, DC	1.949	0.688		8.934	Oct 2012	6.560	Oct 2013	-		6.560	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470333	C/CPFF	GDIT:Dahlgren, VA	5.661	2.349		0.000		0.000		-		0.000	0.000	8.010	0.000
Aegis Ballistic Missile Defense (BMD) 5.1	C/CPFF	Paradigm:Dahlgren, VA	1.587	0.734		0.000		0.000		-		0.000	0.000	2.321	0.000

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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
Development - MD09 - 20117142470336															
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470338	C/CPFF	Gryphon:Dahlgren, VA	0.255	0.216		0.000		0.000		-		0.000	0.000	0.471	0.000
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470341	MIPR	Dahlgren:Dahlgren, VA	4.545	1.524		0.000		2.702	Nov 2013	-		2.702	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470344	C/CPIF	Lockheed Martin:Arlington, VA	0.225	0.000		0.539	Oct 2012	0.659	Nov 2013	-		0.659	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470352	C/CPAF	Raytheon:Arlington, VA	0.182	0.000		0.503	Oct 2012	0.615	Nov 2013	-		0.615	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470355	MIPR	Aegis BMD:Dahlgren, VA	2.478	0.051		0.997	Oct 2012	0.738	Nov 2013	-		0.738	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470358	MIPR	MDA:Arlington, VA	17.000	4.432		0.930	Oct 2012	6.141	Nov 2013	-		6.141	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470359	MIPR	MDA MIDAESS:Arlington, VA	0.000	0.000		9.215	Oct 2012	24.315	Oct 2013	-		24.315	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470359 - 2012722862854	MIPR	JHU/APL:Columbia MD	0.000	0.000		0.000		0.910	Nov 2013	-		0.910	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Standard Missile-3 (SM-3) Block IB Development - MD09	MIPR	JHU/APL:Columbia MD	0.000	0.000		0.000		0.173	Nov 2013	-		0.173	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 -	MIPR	MDA:Arlington, VA	17.260	3.648		3.659	Oct 2012	1.720	Oct 2013	-		1.720	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487038	MIPR	NAVSEA:Washington, DC	64.364	13.530		2.417	Oct 2012	1.246	Oct 2013	-		1.246	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487064	C/CPFF	GDIT:Dahlgren, VA	24.912	4.842		0.000		0.000		-		0.000	0.000	29.754	0.000
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487067	C/CPFF	Paradigm:Dahlgren, VA	6.007	1.156		0.000		0.000		-		0.000	0.000	7.163	0.000
Standard Missile-3 (SM-3) Block IB Development - MD09 - 2011714248707	C/CPFF	Gryphon:Dahlgren, VA	0.445	0.458		0.000		0.000		-		0.000	0.000	0.903	0.000
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487073	MIPR	Dahlgren:Dahlgren, VA	9.053	0.000		0.000		0.513	Nov 2013	-		0.513	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487113	C/CPIF	Lockheed Martin:Arlington, VA	2.009	0.000		0.219	Oct 2012	0.125	Nov 2013	-		0.125	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487117	C/CPAF	Raytheon:Arlington, VA	0.318	0.000		0.205	Oct 2012	0.117	Nov 2013	-		0.117	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487119	MIPR	Aegis BMD:Dahlgren, VA	37.055	0.604		0.427	Oct 2012	0.140	Nov 2013	-		0.140	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487125	MIPR	MDA:Arlington, VA	18.869	8.120		0.390	Oct 2012	1.166	Nov 2013	-		1.166	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487128	MIPR	MDA MIDAESS:Arlington, VA	0.000	0.000		8.841	Oct 2012	4.617	Oct 2013	-		4.617	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09	MIPR	MDA:Arlington, VA	1.984	0.000		0.000		0.000		-		0.000	0.000	1.984	0.000
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501342	MIPR	NAVSEA:Washington, DC	4.032	0.000		0.000		0.000		-		0.000	0.000	4.032	0.000
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501345	C/CPFF	GDIT:Dahlgren, VA	13.868	0.000		0.000		0.000		-		0.000	0.000	13.868	0.000
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501348	C/CPFF	Paradigm:Dahlgren, VA	3.621	0.000		0.000		0.000		-		0.000	0.000	3.621	0.000
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501353	C/CPFF	Gryphon:Dahlgren, VA	0.667	0.000		0.000		0.000		-		0.000	0.000	0.667	0.000
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501356	C/CPIF	Lockheed Martin:Arlington, VA	0.459	0.000		0.000		0.000		-		0.000	0.000	0.459	0.459
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501359	C/CPAF	Raytheon:Arlington, VA	0.404	15.704		0.000		0.000		-		0.000	0.000	16.108	0.404
Aegis Ballistic Missile Defense (BMD) Testing - TESTING - MD09 - 20117142501363	MIPR	MDA:Arlington, VA	9.581	0.000		0.000		0.000		-		0.000	0.000	9.581	9.581

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</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			
Subtotal			511.876	114.338		98.384		125.166		0.000		125.166			

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			
BMDS Level Testing - MD09	MIPR	NSWC/DD:DAHLGREN, VA	26.518	6.995		0.000		0.000		-		0.000	0.000	33.513	0.000
BMDS Level Testing - MD09 - 20117142514355	MIPR	NSWC/PHD:PT. HUENEME, CA	16.141	9.217		0.000		0.000		-		0.000	0.000	25.358	0.000
BMDS Level Testing - MD09 - 20117142514359	MIPR	JHU/APL/MD:COLUMBIA, MD	30.505	5.366		0.000		0.000		-		0.000	0.000	35.871	0.000
BMDS Level Testing - MD09 - 20117142514364	MIPR	MDA:VA	50.987	19.020		0.000		0.000		-		0.000	0.000	70.007	0.000
BMDS Level Testing - MD09 - 20117142514369	SS/CPIF	Lockheed Martin:Moorestown, NJ	38.485	0.000		0.000		0.000		-		0.000	0.000	38.485	0.000
BMDS Level Testing - MD09 - 20117142514372	MIPR	SPAWAR:San Diego, CA	5.405	2.175		0.000		0.000		-		0.000	0.000	7.580	0.000
BMDS Level Testing - MD09 - 20117142514377	SS/CPAF	Raytheon:Tucson, AZ	4.500	0.000		0.000		0.000		-		0.000	0.000	4.500	0.000
BMDS Level Testing - MD09 - 20117142514378	MIPR	PMRF:Barking Sands, Kauai, HI	7.000	5.450		0.000		0.000		-		0.000	0.000	12.450	0.000
BMDS Level Testing - MD09 - 20117142514383	MIPR	NAWC/PM:PT. MUGU, CA	2.700	5.250		0.000		0.000		-		0.000	0.000	7.950	0.000
BMDS Level Testing - MD09 - 20117142514388	MIPR	MDA/DTR:HUNTSVILLE, AL	3.490	0.000		0.000		0.000		-		0.000	0.000	3.490	0.000

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

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			
M&S VV&A and Test Operations - M&S VV&A and Test Operations - MD09	C/CPAF	Northrop Grumman:VA	46.418	14.525		11.571	Oct 2012	11.727	Nov 2013	-		11.727	Continuing	Continuing	Continuing
Subtotal			232.149	67.998		11.571		11.727		0.000		11.727			

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

	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	3,942.817	1,094.395	775.978	726.109	0.000	726.109			

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, MIPRs, 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 0603892C: <i>AEGIS BMD</i>
PROJECT MD09: <i>Aegis BMD</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
BMD 3.6.1 Ship Installations	✧	✧	✧	✧	✧	✧	✧	✧	✧																			
BMD 4.0 Ship Installations			✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	
BMD 5.0 Ship Installations			✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	
BMD 4.0 Development	★																											
BMD 4.0 Certification	✦	✦	✦	✦																								
BMD 5.0 Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	
BMD 5.0 Demo				△																								
BMD 5.0 Certification																												
BMD 5.1 System Requirements Review (SRR) #2	▲																											
BMD 5.1 Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	
BMD 5.1 Demo																												
BMD 5.1 System Design Review (SDR) #1		▲																										
BMD 5.1 System Design Review (SDR) #2				△																								
BMD 5.1 Preliminary Design Review (PDR)																												
BMD 5.1 Critical Design Review (CDR)																												
SM-3 BIK IB Missile Deliveries		✧	✧	✧	✧	✧	✧																					
SM-3 BIK IB Hazard Assessment Testing	✧	✧	✧	✧	✧	✧																						
SM-3 BIK IB Manufacturing Readiness Review (MRR)				▲																								
BMD 5.1 Certification																											△	
FTI-01 (FTO-01 Risk Reduction Flight Test)					▲																							
FTM-16 E2A (Aegis Intercept Flight Test)			▲																									
FTM-18 (Aegis Intercept Flight Test)			▲																									
FTM-19 (Aegis Intercept Flight Test)				△																								

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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 3.6.1 Ship Installations	1	2012	1	2014
BMD 4.0 Ship Installations	3	2012	1	2015
BMD 5.0 Ship Installations	3	2012	4	2017
BMD 4.0 Development	1	2012	1	2012
BMD 4.0 Certification	1	2012	4	2012
BMD 5.0 Development	1	2012	2	2015
BMD 5.0 Demo	1	2013	1	2013
BMD 5.0 Certification	3	2015	3	2015
BMD 5.1 System Requirements Review (SRR) #2	1	2012	1	2012
BMD 5.1 Development	1	2012	4	2017
BMD 5.1 Demo	2	2017	2	2017
BMD 5.1 System Design Review (SDR) #1	2	2012	2	2012
BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
BMD 5.1 Critical Design Review (CDR)	1	2015	1	2015
SM-3 Blk IB Missile Deliveries	2	2012	3	2013
SM-3 Blk IB Hazard Assessment Testing	1	2012	2	2013
SM-3 Blk IB Manufacturing Readiness Review (MRR)	4	2012	4	2012
BMD 5.1 Certification	2	2018	2	2018
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
FTM-16 E2A (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	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 0603892C: <i>AEGIS BMD</i>	PROJECT MD09: <i>Aegis BMD</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012

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 0603892C: <i>AEGIS BMD</i>	PROJECT MC09: <i>Cyber Operations</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
MC09: <i>Cyber Operations</i>	-	0.000	0.000	0.260	-	0.260	0.264	0.269	0.273	0.281	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 MC09 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD09 of this PE 0603892C.

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 AEGIS Ballistic Missile Defense 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 Cybersecurity 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	0.260
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: See MD09 for FY 2013 plans.			
FY 2014 Plans:			

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 0603892C: <i>AEGIS BMD</i>	PROJECT MC09: <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Conduct cyber security / information assurance engineering and architecture planning for Aegis BMD information technology systems.			
-Plan and test the IA controls for Ballistic Missile Defense System (BMDS) Aegis BMD systems.			
-Develop Aegis BMD DIACAP certification and accreditation packages.			
-Conduct Controls Validation Testing (CVT) of Aegis BMD mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.			
-Conduct annual information assurance reviews on the Aegis BMD enclaves to assess compliance in implementing and maintaining IA controls.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.260

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
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 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

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 0603892C: <i>AEGIS BMD</i>	PROJECT MC09: <i>Cyber Operations</i>
---	---	---

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>
• 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
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	299.012	276.338	129.374		129.374	124.547	51.927	55.808	32.938	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

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 0603892C: <i>AEGIS BMD</i>	PROJECT MC09: <i>Cyber Operations</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			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies:Huntsville, AL	0.000	0.000		0.000		0.260	Jul 2014	-		0.260	0.000	0.260	0.000
Subtotal			0.000	0.000		0.000		0.260		0.000		0.260	0.000	0.260	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	0.000	0.000	0.000	0.260	0.000	0.260	0.000	0.260	0.000

Remarks
N/A

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</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
MT09: <i>Aegis BMD Test</i>	-	0.000	150.291	137.373	-	137.373	117.521	82.152	116.380	159.295	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

The Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. The Aegis BMD element of the BMDS capitalizes upon and evolves from the existing U.S. Navy Aegis Weapons System (AWS) and Standard Missile (SM) infrastructures. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles (SRBM), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight and shorter range missile in terminal phase. Aegis BMD also provides a Long Range Surveillance and Track (LRS&T) capability to the BMDS. Upgrades to both the Aegis BMD Weapon System and the SM-3 configuration enable Aegis BMD to provide effective, supportable defensive capability against longer range, more sophisticated threats and an enduring Aegis Ashore defensive capability.

Proving Missile Defense:

Working with the Services' Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), Missile Defense Agency (MDA) has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

As part of the Agency's rigorous test program, System Pre-Flight predictions provide confidence in test execution by predicting element performance and exercising element interfaces. System Post Flight Reconstruction replicates the Ballistic Missile Defense System configuration and actual environmental conditions and target dynamics observed in flight to anchor modeling and simulation results.

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments.

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

	FY 2012	FY 2013	FY 2014
Title: Aegis Ballistic Missile Defense (BMD) Testing	0.000	87.199	55.160

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments: - Funded under MD09 accomplishments.</p> <p>FY 2013 Plans: - Conduct Aegis BMD-specific analysis during pre- and post-mission analysis phases. - Begin test planning for FY 2014 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test. - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Participate in BMD special technology experiments.</p> <p>FY 2014 Plans: - Continue to conduct Aegis BMD-specific analysis during pre and post-mission analysis phases. - Begin test planning for FY 2015 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test. - Continue to conduct Post Flight Analysis for test conducted in FY 2014 Aegis flight test missions. - Prepare for and conduct Ballistic Missile Defense System (BMDS) Flight and Ground Test events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule. - Participate in BMD special technology experiments.</p>	0	0	0
--	---	---	---

<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2012 Accomplishments: - Funded under MD09 accomplishments.</p> <p>FY 2013 Plans: - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Exercise of Phase II capability of the Phased Adaptive Approach.</p> <p>FY 2014 Plans: - Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.</p>	0.000 0	41.986 0	63.040 0
--	------------	-------------	-------------

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Exercise of Phase II capability of the Phased Adaptive Approach.			
Title: Modeling & Simulation HWIL Framework, Simulations, Models Articles:	0.000 0	21.106 0	19.173 0
Description: See Description below.			
FY 2012 Accomplishments: - Funded under MD09 accomplishments.			
FY 2013 Plans: - Continue to deploy and integrate BMDS Hardware in the Loop (HWIL) stimulation framework-Single Stimulation Framework (SSF) with Elements for BMDS ground, Flight tests and training - Implement upgrades to the BMDS HWIL SSF that support execution of increasingly more complex BMDS ground test campaigns. - Support BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos.			
FY 2014 Plans: - Deliver the Objective Simulation Framework (OSF) Version 1.0 to begin the transition of Hardware-in-the-Loop capabilities. - Deliver improved debris and phenomenology modeling changes to support Aegis 4.0 and future baselines. - Incorporate advanced M&S capabilities into the next version of the OSF for Aegis BMD for tracking, discrimination, engagement and associated upper tier mitigation to satisfy PAA Phase II/III needs.			
FY 2014 decrease is due to initial consolidation of Digital and HWIL frameworks as part of OSF implementation.			
Accomplishments/Planned Programs Subtotals	0.000	150.291	137.373

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	457.529	420.630	308.522		308.522	230.466	128.743	41.014	0.000	0.000	1,586.904
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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>

D. Acquisition Strategy

The Aegis Ballistic Missile Defense (BMD) element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall Ballistic Missile Defense System (BMDS) capability. Competition will be maximized for procurement of any products or services in FY 2014, as appropriate.

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</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			
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			
Aegis Ballistic Missile Defense (BMD) Testing - MT09 -	MIPR	NSWC:DAHLGREN, VA	0.000	0.000		10.755	Oct 2012	6.804	Oct 2013	-		6.804	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597076	MIPR	PMRF Barking Sands:Kauai, HI	0.000	0.000		5.674	Oct 2012	3.589	Oct 2013	-		3.589	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597078	MIPR	NAWC/ PM PT:MUGU, CA	0.000	0.000		5.790	Oct 2012	3.663	Oct 2013	-		3.663	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597082	MIPR	NSWC DD:DAHLGREN, VA	0.000	0.000		3.883	Oct 2012	2.456	Oct 2013	-		2.456	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630564	MIPR	JHU/APL/ MD:COLUMBIA, MD	0.000	0.000		23.042	Oct 2012	14.576	Nov 2013	-		14.576	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
---	---	---

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			
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630567	MIPR	MDA:VA	0.000	0.000		7.278	Oct 2012	4.604	Oct 2013	-		4.604	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630569	SS/CPIF	Lockheed Martin:Moorestown, NJ	0.000	0.000		10.752	Oct 2012	6.801	Oct 2013	-		6.801	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 20111220263057	MIPR	SPAWARD:San Diego, CA	0.000	0.000		8.146	Oct 2012	5.153	Oct 2013	-		5.153	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 20111220266947	MIPR	NSWC/PHD PT.:HUENEME, CA	0.000	0.000		11.879	Oct 2012	7.514	Oct 2013	-		7.514	Continuing	Continuing	Continuing
BMDS Level Testing - MT09	MIPR	NSWC PHD PT.:HUENEME, CA	0.000	0.000		3.406	Oct 2012	4.108	Oct 2013	-		4.108	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535339	MIPR	JHU/APL/ MD:COLUMBIA, MD	0.000	0.000		8.645	Oct 2012	10.425	Oct 2013	-		10.425	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 20111220253534	MIPR	NAVSEA:VA	0.000	0.000		11.014	Oct 2012	13.282	Oct 2013	-		13.282	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535342	MIPR	SPAWAR SAN DIEGO:CA	0.000	0.000		1.586	Oct 2012	1.913	Oct 2013	-		1.913	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535344	MIPR	CORONA:CA	0.000	0.000		1.751	Oct 2012	2.112	Oct 2013	-		2.112	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535347	MIPR	LOCKHEED MARTIN:MOORESTOWN NJ	0.000	0.000		4.338	Oct 2012	5.231	Oct 2013	-		5.231	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535348	MIPR	AEGIS BMD:VA	0.000	0.000		11.246	Oct 2012	25.969	Oct 2013	-		25.969	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - Objective Simulation Framework, Procure, Install, Test	C/CPAF	BOEING:AL	0.000	0.000		21.106	Oct 2012	19.173	Oct 2013	-		19.173	Continuing	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>
---	---	---

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		150.291		137.373		0.000		137.373			

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

	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	150.291	137.373	0.000	137.373			

Remarks
N/A

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>

Significant Event Complete
 Milestone Decision Complete
 Element Test Complete
 System Level Test Complete
 Complete Activity
 Significant Event Planned
 Milestone Decision Planned
 Element Test Planned
 System Level Test Planned
 Planned Activity

	FY 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	1	2	3
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)								△																							
FTX-19 (Aegis Simulated Intercept Flight Test)								△																							
FTM-21 (Aegis Intercept Flight Test) (Salvo)								△																							
FTM-22 (Aegis Intercept Flight Test)								△																							
FTX-18 (Aegis Simulated Intercept Flight Test)								△																							
FTX-20 (Aegis Simulated Intercept Flight Test)										△																					
AA CTV-01 (Aegis Ashore Flight Test)												△																			
FTM-23 (Aegis Intercept Flight Test)													△																		
FTM-24 (Aegis Intercept Flight Test)														△																	
AA FTM-02 (Aegis Ashore Intercept Flight Test)															△																
AA FTM-01 (Aegis Ashore Intercept Flight Test)																△															
FTM-26 (Aegis Intercept Flight Test)																	△														
FTM-25 (Aegis Intercept Flight Test)																		△													
FTX-23 (Aegis Flight Test)																															
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																															
FTM-29 / FTM-30																															
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																															
GTD-04E																															
Fast Event 1																															
Fast Event 2																															

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 0603892C: <i>AEGIS BMD</i>	PROJECT MT09: <i>Aegis BMD Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2013	3	2013
FTX-19 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
FTM-21 (Aegis Intercept Flight Test) (Salvo)	3	2013	3	2013
FTM-22 (Aegis Intercept Flight Test)	3	2013	3	2013
FTX-18 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
FTX-20 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
FTM-23 (Aegis Intercept Flight Test)	3	2014	3	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
AA FTM-02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
AA FTM-01 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
FTM-26 (Aegis Intercept Flight Test)	1	2015	1	2015
FTM-25 (Aegis Intercept Flight Test)	1	2015	1	2015
FTX-23 (Aegis Flight Test)	3	2016	3	2016
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
FTM-29 / FTM-30	1	2018	1	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2018	4	2018
GTD-04E	1	2014	1	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	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 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development 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
MX09: <i>Aegis BMD Development Support</i>	-	4.427	15.588	23.963	-	23.963	44.883	67.185	73.515	82.641	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

Aegis Ballistic Missile Defense, in accordance with negotiated agreements between the U. S. Navy and the Missile Defense Agency has identified and segregated funding for Operations and Sustainment of Aegis BMD specific elements resident aboard Aegis capable Navy ships and Land Based, Aegis Ashore Facilities. This support is identified under several categories. First, sustainment to Land Based Standard Missile-3 (SM-3) Pacific Missile Range Facility (PMRF). Second, Computer Program Sustainment, consisting of, but not limited to, review of Trouble Observation Reports (TORs) that are generated by ship crews during exercises or deployments, determination of root causes and preparation of Computer Program Change Request (CPCR) to correct TORs, updates to the in-service computer program to apply, test and certify multiple CPCRs, and tests installation of Aegis Weapon System (SPY / FCS) alignment updates (as required). Third, provide Support to Annual Integration Events (AIEs) to ensure any updated Aegis Combat System (ACS) computer programs do not degrade BMD equipped ships and provide distance and technical support for BMD equipped ships. Fourth, provide technical support documentation updates and provide an In-Service Engineering Agent (Naval Surface Warfare Center Port Hueneme Division) for annual technical evaluations of training, logistics, and material readiness, to include any corrective actions required prior to a BMDS mission. Finally, provide Shipboard Sustainment, consisting of, but not limited to BMDS unique parts and material support for parts as listed in the Cost Analysis and Requirements Document (CARD) and parts as identified by the Commercial off the Shelf (COTS) Obsolescence / Diminished Manufacturing Support Engineering (DMS).

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

	FY 2012	FY 2013	FY 2014
Title: Aegis Ballistic Missile Defense Operations and Support	4.427	15.588	23.963
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments:			
- Threat updates to support real world events and flight missions.			
FY 2013 Plans:			
- Provide In-service Engineering support to Aegis BMD.			

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 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide operational and maintenance training for Aegis BMD ship crews. - Provide logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD. - Provide initial sustainment to Land Based SM-3 Pacific Missile Range Facility (PMRF). - Provide Sustainment of BMD 3.6.1 Computer Program. - Provide Sustainment of Shipboard BMD Specific Equipment. - Provide Sustainment of SM-3. - Provide support to Phase III/IV system engineering studies. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Maintain and operate the facility at PMRF and ensure Aegis Ashore mission. - Provide Sustainment of BMD 3.6.1 Computer Program to include the engineering and development of all 3.6 baseline update software and associated safety, system engineering, configuration management, performance verification, supporting documentation, labs, information assurance, certification, and critical emergent code corrections based on test data. - Provide Shipboard Sustainment of BMD specific equipment to include In-service sustainment of BMD Baseline Aegis Combat System (ACS) and Vertical Launch System Global Positioning System (VLS GPS) Interface (VGI) hardware configuration management and integrated logistics support certifications submission and approval, Commercial Off-The-Shelf management Technical documentation updates. - Provide Sustainment of Standard Missile-3 (SM-3) to include Recertification, Transportation, Integrated Logistics Support, VLS Canister Support, Quality and Reliability, Minor repairs, and Surveillance. - Provide In-service Engineering support to Aegis BMD. - Provide capability and maintenance training for Aegis BMD ship crews. <p>The FY 2014 increase is due to the increase in the number of operational SM-3s and BMD capable ships.</p>			
Accomplishments/Planned Programs Subtotals	4.427	15.588	23.963

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
• 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
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	299.012	276.338	129.374		129.374	124.547	51.927	55.808	32.938	Continuing	Continuing

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 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
---	---	--

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>
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	457.529	420.630	308.522		308.522	230.466	128.743	41.014	0.000	0.000	1,586.904

Remarks

D. Acquisition Strategy

The Aegis Ballistic Missile Defense (BMD) element acquisition approach supports evolutionary development, continuously building upon demonstrated capabilities to advance overall Ballistic Missile Defense System (BMDS) capability. After considering all the technical and management aspects of the program and to meet the requirements presented by an evolving ballistic missile threat, the Aegis BMD program awarded sole source contracts to Raytheon and Lockheed Martin to continue development of the Standard Missile-3 (SM-3) missile and the Aegis BMD Weapon System, respectively.

Competition will be maximized for purchase of any products or services in FY 2014, as appropriate.

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 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</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			
Aegis Ballistic Missile Defense Operations and Support - ABMD O&S - MX09	MIPR	VARIOUS:/NJ, VA, CA	0.000	4.427		15.588	Oct 2012	23.963	Oct 2013	-		23.963	Continuing	Continuing	Continuing
Subtotal			0.000	4.427		15.588		23.963		0.000		23.963			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603892C: <i>AEGIS BMD</i>	PROJECT MX09: <i>Aegis BMD Development Support</i>
---	---	--

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			

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	4.427	15.588	23.963	0.000	23.963			

Remarks
N/A

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 0603892C: <i>AEGIS BMD</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>	-	40.197	50.550	49.351	-	49.351	47.477	53.046	44.086	41.099	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

In FY 2013, Program Wide Support reflects a proportional change as a result of increases to BMD Aegis.

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	40.197	50.550	49.351
Articles:	0	0	0
Description: See Description below.			
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	40.197	50.550	49.351

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 0603892C: <i>AEGIS BMD</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

NA

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 0603892C: <i>AEGIS BMD</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		0.016	Mar 2013	6.129	Mar 2014	-		6.129	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries	Allot	MDA:Multi: AK, AL, CO, CA, VA	0.000	24.331		41.423	Oct 2012	41.352	Oct 2013	-		41.352	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	Allot	Various:Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.000	1.500		5.776	Mar 2013	1.870	Mar 2014	-		1.870	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPAF	Various:Multi: AL, CA, CO, VA	0.000	14.366		1.720	Nov 2012	0.000		-		0.000	16.086	32.172	0.000
Program Wide Support - FFRDC/UARC	MIPR	Various:Multi: AL, CA, CO, VA	0.000	0.000		1.615	Nov 2012	0.000		-		0.000	1.615	3.230	0.000
Subtotal			0.000	40.197		50.550		49.351		0.000		49.351			

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	40.197	50.550	49.351	0.000	49.351			

Remarks
N/A

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 0603893C: <i>Space Tracking and Surveillance System</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	597.048	86.278	51.313	44.947	-	44.947	32.007	33.778	34.555	34.974	Continuing	Continuing
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	597.048	85.224	48.708	42.587	-	42.587	30.450	32.047	32.607	33.039	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	1.054	2.605	2.360	-	2.360	1.557	1.731	1.948	1.935	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

With the successful launch of two Space Tracking and Surveillance System Demonstration (STSS-D) Satellites in 2009, the agency has on-orbit capability to validate remote sensor and fire control integration to inform the design and operation of future Missile Defense Agency (MDA) space-layer capabilities, to characterize contribution of space data into the Ballistic Missile Defense System (BMDS) architecture, and to provide sensor measurements and background data supporting trade studies and analyses for future MDA space-layer options and Standard Missile-3 (SM-3) IIB development. Lessons learned from the two STSS-D satellites are guiding decisions on the development of a fiscally sustainable, continuously available, future operational constellation and ground communications/processing system.

STSS-D is providing risk reduction for future MDA space-layer options models, algorithms, sensors and spacecraft development by providing background and clutter scene characterization, complex target signatures, interface definition, communications architectures, and performance across acquisition, tracking, and discrimination. STSS-D is also providing definition to BMDS Concept of Operations, timelines and performance requirements for sensor cuing and weapons engagement such as Aegis Launch On/Engage On from remote space sensors.

STSS-D will emphasize continued research and development to address the more sophisticated threats the Agency expects to encounter in the far term. The greatest protection against missile defense threats of all ranges remains a highly available early missile tracking capability from space. Space sensors provide the most cost effective and operationally suitable means of providing global persistent surveillance and engagement, directly addressing the number one missile defense priority need for Combatant Commanders. STSS-D is a capability development activity for the demonstration of technologies to support development and capability delivery of future MDA space-layer options. In addition, the STSS-D satellites have demonstrated the ability of a space sensor to provide high precision, real time tracking of missiles and midcourse objects, thus enabling simultaneous regional, theater, and strategic missile defense systems to be cued to track well beyond their organic detection capability. Data from on-going STSS-D testing has validated the ability to track cold, midcourse objects from space and close the fire control loop with BMDS interceptors. During several Missile Defense Agency (MDA) Flight Tests, STSS-D has provided data in real-time that has met the Aegis Missile Defense Systems Quality of Service (QoS) data requirements for Remote Engagement Authorized (REA). Finally, STSS-D provides a new infrared sensor phenomenology for the

UNCLASSIFIED

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603893C: <i>Space Tracking and Surveillance System</i>

BMDS that will demonstrate the benefit of future MDA space-layer capabilities when combined with radars that will provide robustness against current and advanced countermeasures.

Missile Defense Agency (MDA) has developed, and is testing, two STSS-D satellites to demonstrate key functions of space sensors in support of future MDA space-layer options risk reduction. STSS-D Element Level testing is funded as part of a capabilities development program and reflected in the Program Element submission. Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components were tested early in development and this testing was necessary prior to conducting Ballistic Missile Defense (BMD) level testing. Key data from the STSS-D satellites efforts continue to provide lessons learned as MDA pursues longer term space sensor needs.

- Space sensors BMDS sensor coverage to a global level. The STSS-D has demonstrated the capability of satellites to track ballistic missiles and the ability to provide accurate tracking information to the Ballistic Missile Defense System (BMDS) battle manager to close the fire control loop with BMDS interceptors, thus extending the effective range of BMDS interceptors and other sensors.
- Space-based sensors are not limited by basing rights issues or deployment decisions, and will allow cost effective coverage of countries and large areas not accessible from ground based sensors.
- Space based visible and Infrared (IR) sensors will complement radars and contribute to a sensor architecture more robust to countermeasures
- Space-based sensors will enable near continuous threat observation and tracking from launch to intercept, covering threats by augmenting the coverage of the BMDS radars, and providing state vectors to Command and Control, Battle Management and Communications (C2BMC) to enable interceptor fire control via multiple BMDS assets (Aegis, Ground-based Midcourse Defense (GMD), Terminal High Altitude Area Defense (THAAD))

Goals for STSS-D

- Risk reduction for future Missile Defense Agency (MDA) space-layer architectures by demonstrating Aegis Launch on Remote in FY 2013
- Risk reduction for future MDA space-layer architectures by demonstrating the ability to cue or be cued
- Demonstrate C2BMC interfaces, sensor registration, communication chains and latencies to support future MDA space-layer concept of operations development

Near Field Infrared Experiment (NFIRE)

The NFIRE technology project was designed to collect near field phenomenology data for use in plume to hard body handover algorithms for boost phase interceptor programs. MDA used this data to validate the models and simulations that are fundamental to developing the guidance and endgame homing algorithms. NFIRE is now focused on future MDA space-layer sensors risk reduction and other BMDS element development support by collecting background, clutter, and target signatures for modeling and algorithm development and validation. A secondary objective of the experiment has been to collect hyper-temporal short wave infrared and visible data for assessing early launch detection and tracking capability. The experiment includes three plume signature mission types: targets of opportunity, dedicated fly-bys, and ground observations. The dedicated fly-by experiments have been accomplished. The NFIRE satellite also carries a Laser Communication Terminal, which has been and continues to be used to conduct communication experiments with the German Terra SAR-X satellite. These experiments test low earth orbit satellite-to-ground and satellite-to-satellite capabilities of the terminal for potential incorporation into the BMDS. Data products are utilized by multiple programs to improve missile engagement performance.

Goals for NFIRE

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 0603893C: <i>Space Tracking and Surveillance System</i>
---	--

- Conduct multiple data collection missions from the Missile Defense Space Development Center (MDSDC) against ground, air, space and ballistic missile targets of opportunity
- Conduct low earth orbit satellite-to-satellite and satellite-to-ground laser communication experiments
- Provide data to validate models and simulations that are fundamental to developing the navigation, guidance and control, and endgame homing algorithms, as well as laser communication proof of concept

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	96.232	51.313	45.355	-	45.355
Current President's Budget	86.278	51.313	44.947	-	44.947
Total Adjustments	-9.954	0.000	-0.408	-	-0.408
• 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	-3.751	0.000			
• SBIR/STTR Transfer	-6.203	0.000			
• Other Adjustment	0.000	0.000	-0.408	-	-0.408

Change Summary Explanation

The FY 2014 reduction reflects a 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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	597.048	85.224	48.708	42.587	-	42.587	30.450	32.047	32.607	33.039	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

Space Tracking and Surveillance System Demonstration Satellites (STSS-D)

The STSS-D satellites provide two on-orbit satellite assets with visible and infrared sensors in low earth orbit for testing with other Ballistic Missile Defense Systems (BMDS) elements. These two satellites provide valuable risk reduction for acquisition, tracking, and discrimination functionality to include stereo data fusion, cueing radars over the horizon and over-the-horizon fire control. The program is demonstrating the functions and interfaces required for space data delivery to the BMDS, validating the data quality necessary for interceptors to launch and/or engage on STSS-D sensor data. The two Demonstration Satellites are operated 24 hours a day, 7 days a week from the ground station processing center at the Missile Defense Space Development Center (MDSDC) with a government and contractor team. On-orbit, STSS-D satellites continue data collection and analyses in FY 2012 and beyond striving to view all available Targets of Opportunity (TOOs) to include participation with other BMDS target and flight tests that provide demonstration of the Missile Defense Agency (MDA) Space Layer capabilities and allow collection of future system risk reduction information.

The satellites are demonstrating key functions of missile tracking with space sensors in support of future Missile Defense Agency (MDA) space-layer capabilities risk reduction. On-orbit sensor operations are collecting invaluable background, scene and target signatures to support future MDA space-layer and other weapon sensor development trade studies. STSS-D activities support future MDA space-layer capabilities development by integration of space-based missile tracking (midcourse phases); sensor and weapons cueing (such as Aegis and Terminal High Altitude Area Defense (THAAD)) via Command and Control, Battle Management and Communications (C2BMC); features and discrimination; and hit/impact point assessments into C2BMC. STSS-D risk reduction for future MDA space-layer options will enable early capability assessment of the Warfighter's need for a highly available early missile tracking capability from space providing an operationally suitable means of global persistent surveillance and engagement. Capabilities being assessed for future MDA space-layer capabilities include detecting and acquiring ballistic missiles; tracking ballistic missiles and their deployed objects; emerging threat detection and tracking; performing autonomous acquisition-to-track handover within a satellite; performing tracking handover to a satellite from a ground cue; performing uplink and downlink of mission, health, and status data both directly and via crosslink between two satellites; reporting ballistic missile and intercept event to close the fire-control loop; filtering reports to C2BMC; providing near real-time object data to external users; and providing a System Performance Evaluation Tool model. As such, the demonstration of these activities will support future MDA space-

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

layer capability development and will enable meeting a Warfighter's requirements to include tracking missile threats and objects of interest; provide post-launch sensor cueing; integrate, fuse and correlate sensor data; engage/re-engage ballistic missile threats; and provide system modeling tools.

MDA Element testing is based on an integrated, comprehensive, and phased test program. Element systems, subsystems, and components are tested early in development and are necessary prior to conducting BMDS level testing. The STSS-D Element Level testing is funded as part of a capabilities development program and reflected in this Program Element (PE) submission. The STSS-D satellites demonstrate key functions of space sensors. The MDA will continue planning for and conducting integrated BMDS intercept tests based on track data passed from the STSS Demonstration Satellites through C2BMC to Aegis, Ground-based Midcourse Defense (GMD), or other interceptors. The Advanced Space Operations Development includes activities to reduce risk for future space integration and exploitation demonstrating expected architectures, capabilities, Concept of Operations, timelines, etc.

Near Field Infrared Experiment (NFIRE)

Funding for On-Orbit Operations and cooperative tests are planned to continue pending a positive assessment of the NFIRE satellite's health and utility. Participation is planned for tests in the Integrated Master Test Plan to include Standard Missile-3 (SM-3) intercept using Space Tracking and Surveillance System Demonstration Satellites (STSS-D) as a remote sensor.

The NFIRE satellite is operated from the Missile Defense Space Development Center (MDSDC) and continues to collect environmental background characterization (regional/seasonal atmospheric radiance variability, day-night, land-sea clutter, clouds, auroral measurements, etc) for future Missile Defense Agency (MDA) space-layer sensors and SM-3 IIB seeker development programs, hyper-temporal short wave infrared data to support research and development of early launch detection and tracking capabilities, and earth limb radiance measurements to support improvement of environmental models. The NFIRE satellite also carries a Laser Communication Terminal to conduct communication experiments with the German Terra SAR-X satellite. These communications experiments test low earth orbit satellite-to-ground and satellite-to-satellite laser communications capabilities for potential incorporation into the Ballistic Missile Defense Systems (BMDS). The laser communication experiments will be conducted on a non-interference basis with other MDA missions. MDA will continue to assess the health/utility of the NFIRE satellite on an annual basis to determine whether to continue NFIRE operations and testing.

Lessons learned and data gathered from the STSS-D program and the NFIRE program will continue to provide valuable information for future MDA space-layer modeling and simulation activities in assessing the capability of a low earth orbit constellation to complement sensor coverage and missile detection and tracking capabilities provided by Overhead Persistent Infrared (OPIR) sensors.

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

	FY 2012	FY 2013	FY 2014
Title: Demonstration Satellites	66.375	45.689	39.031
Articles:	0	0	0
Description: The Space Tracking and Surveillance System Demonstration (STSS-D) Satellites operate 24 hours a day, 7 days a week to collect and deliver critical space and missile characterization data used to design and inform BMDS and Space Layer future capabilities.			

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p><i>FY 2012 Accomplishments:</i></p> <ul style="list-style-type: none"> - Conducted missile tracking experiments as identified in the test specific sections, Ballistic Missile Defense Systems (BMDS) Level Testing and Element Integration and Testing, that follow - FY 2012 testing of the STSS-D satellites continued the execution of the STSS-D-related Critical Engagement Conditions (CEC)/ Empirical Measurement Events (EME) -- Collected test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance - Conducted independent government validation of STSS-D satellites data in the STSS-S Demo Analysis Center <p><i>FY 2013 Plans:</i></p> <ul style="list-style-type: none"> - Testing includes Standard Missile-3 (SM-3) intercept using STSS-D as a remote sensor. - Conduct missile tracking experiments as identified in the test specific sections, Ballistic Missile Defense System (BMDS) Level Testing and Element Integration and Testing - FY 2013 testing of the STSS-D satellites continues the execution of the STSS-D-related CECs/EMEs -- Collection of test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance - Conduct independent government validation of STSS-D satellites data at the Missile Defense System Development Center (MDSDC) - Perform satellite functionality testing and calibration as part of the satellite operations - In FY 2013, testing begins to transition from dedicated, more costly, first-time efforts to missions collecting data to verify earlier results. These verifications further strengthen BMDS-related modeling and simulation as well as support development of future systems design and concept of operations. <p><i>FY 2014 Plans:</i></p> <ul style="list-style-type: none"> - Simulated Aegis (Hardware-in-the-Loop (HWIL)) Engage-on STSS-D test - Conduct missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing - FY 2014 testing of the STSS-D satellites continues the execution of the Space-related CECs/EMEs -- Collection of test data from CECs/EMEs used in updating and verification, validation, and accreditation of modeling and simulation representations for assessing system performance - Conduct independent government validation of STSS-D satellites data at the Missile Defense Space Development Center (MDSDC) - Perform satellite functionality testing and calibration as part of the satellite operations 			
---	--	--	--

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 transition from dedicated, more costly, first-time efforts to less costly missions collecting data to verify earlier results. These verifications further strengthen BMDS-related modeling and simulation as well as support development of future systems design and concept of operations.			
--	--	--	--

Title: BMDS Level Testing	12.972	3.019	2.556
Articles:	0	0	0

Description: STSS-D Satellites and Near Field Infrared Experiment (NFIRE) satellites participate in the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) events to collect Critical Engagement Conditions (CEC)/Empirical Measurement Events (EME) to verify, validate, and accredit modeling and simulation representations used for assessing system performance and prove the capability of space based sensors contributions to the BMDS mission.

FY 2012 Accomplishments:

- Demonstrated first simultaneous tracking of two targets with STSS-D during Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12)
- Both STSS-D satellites accomplished acquisition sensor-to-track sensor handoff and tracked both the Medium and Short-Range Ballistic Missiles (SRBM) in stereo. Also, internally sent cues to both STSS-D satellites to acquire and track the SRBM in midcourse.
- At the same time, in shadow mode, transmitted data through the Enterprise Sensors Laboratory (ESL) and X-Lab to the Space and Naval Warfare Systems Command (SPAWAR) lab (Aegis 3.6.1) and accomplished Aegis Remote Engagement Authorized (REA) using STSS-D data.
- Planned and executed STSS-D participation in BMDS flight tests. Collections from a variety of test targets and conditions enabled a statistically relevant database to be constructed to support future space system design.
- Current STSS-D participation in the IMTP included the following BMDS flight tests with STSS-D striving to meet reasonable expectations to view these as well as seeking opportunities to participate in other IMTP events:
 - Aegis Intercept Flight Test (FTM-16 E2a): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM target with associated objects
 - Demonstrate birth-to-death tracking of missile target from low earth orbit
 - Collect data to analyze real-time sharing of track messages to the Ballistic Missile Defense System (BMDS)
 - Simulate Aegis (Hardware-in-the-Loop) Launch-On STSS-D track
 - Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 intercept of a Medium-Range Ballistic Missile (MRBM) target with a Standard Missile-3 (SM-3) Block IB
 - Collection of Critical Engagement Conditions (CEC)/Empirical Measurement Events (EME) used in updating and verification, validation and accreditation of future space system modeling and simulation representations to be used to assess system performance

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)			FY 2012
<ul style="list-style-type: none"> - Planned and participated in available Targets of Opportunity (TOOs) - Collected both STSS-D and Overhead Persistent Infrared (OPIR) data live during TOOs and Missile Defense Agency (MDA) flights tests, then play back OPIR data through the ESL and pass data to X-Lab. The X-Lab will then provide an OPIR system cue to the STSS-D track sensor, the STSS-D track sensor will then point to the target based solely on the OPIR cue. This will validate the STSS-D Cueing Campaign and demonstrate the viability of the Precision Tracking Space System (PTSS) Concept of Operations. - Conducted planning for integrated BMDS intercept test based on track data from the STSS-D satellites through Command and Control, Battle Management and Communications (C2BMC) to Aegis or other weapon systems - Continued STSS-D Demo Analysis Center participation in BMDS testing and collection of scientific data for refinement of BMDS-relevant models, demonstration and trade space determination for PTSS, and development support for Standard Missile-3 (SM-3) Blk IIB interceptor <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 SM-3 Block IB against an actual Medium Range Ballistic Missile (MRBM) target - Plan and execute STSS participation in BMDS flight tests. Collection from a variety of test targets and conditions enable a statistically relevant database to be constructed to support future space system design. - Current STSS-D participation in the Integrated Master Test Plan (IMTP) is planned to include the following BMDS flight tests with STSS-D striving to meet reasonable expectations to view these as well as seeking opportunities to participate in other IMTP events: <ul style="list-style-type: none"> -- Aegis Simulated Intercept Flight Test (FTM-21 E1): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three Short-Range Ballistic Missiles (SRBMs) --- Collect data and analyze STSS-D capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene --- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS-D track --- Conduct post-test assessment to support STSS-D providing precision cue through post-test playback of recorded data --- Demonstrate STSS-D precision cue of radar in post-test playback of recorded data -- Aegis Simulated Intercept Flight Test (FTM-21 E2): Aegis 4.0.1 (two ships) SM-3 Block IB simulated engagement using digital engagement coordination of three Short-Range Ballistic Missiles (SRBM) --- Collect data and analyze Space Tracking and Surveillance System Demonstration (STSS-D) Satellites capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene --- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS-D track 			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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>--- Conduct post-test assessment to support STSS-D providing precision cue through post-test playback of recorded data</p> <p>--- Demonstrate STSS-D precision cue of radar in post-test playback of recorded data</p> <p>-- Aegis Intercept Flight Test (FTM-21 E3): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB salvo engagement of SRBM</p> <p>--- Collect data and analyze STSS-D capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Complex Scenes, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>--- Simulate Aegis (Hardware-in-the-Loop) Engage-On STSS-D track</p> <p>--- Conduct post-test assessment to support STSS-D providing precision cue through post-test playback of recorded data</p> <p>--- Demonstrate STSS-D precision cue of radar in post-test playback of recorded data</p> <p>-- Aegis Intercept Flight Test (FTM-22 E2): Aegis 4.0.1 SM-3 Block IB engagement of a SRBM</p> <p>--- Collect data and analyze STSS capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, and Post Boost Detection</p> <p>-- Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-1): Ballistic Missile Defense System (BMDS) Operational Flight Test against SRBM and Medium-Range Ballistic Missile (MRBM) targets</p> <p>--- Collect data and analyze STSS-D capability in the areas of Booster Acquisition, Plumes, Hard Body Detection, Post Boost Detection, Emerging Threat Detection, Emerging Threat Tracking, and Multiple Objects in a Scene</p> <p>--- Fuse STSS-D Object Sighting Message and other sensors data in the Enterprise Sensors Laboratory and pass data to X-Lab using post-test playback of recorded data</p> <p>--- Simulate Aegis Launch-On STSS-D in shadow mode</p> <p>--- Demonstrate STSS-D ability to precision cue BMDS radars and receive system cues live during the event and post-test using playback of recorded data</p> <p>- Plan and participate in available Targets of Opportunity (TOOs)</p> <p>- Collect both STSS-D and Overhead Persistent Infrared (OPIR) data live during TOOs and Missile Defense Agency (MDA) Flight Tests, then play back</p> <p>FY 2014 Plans:</p> <p>- Continue efforts as listed under FY 2013</p> <p>- Emphasis during 2014 will be to:</p> <p>-- Future MDA space-layer risk reduction to include Overhead Persistent Infrared (OPIR) Enterprise integration and demonstrations across Overhead Persistent Infrared (OPIR) cuing, Joint Tasking Operations, and data utility</p> <p>-- Conduct STSS-D data collections to support mission utility assessment across Space Situation Awareness, Battle Space Awareness, and Technical Intelligence missions to include integration, analysis, and studies to confirm data sharing capabilities</p> <p>-- Demonstrate STSS-D providing precision tracking, cues, and discrimination support to future versions of Command and Control, Battle Management and Communications (C2BMC) and Ballistic Missile Defense System (BMDS) weapon systems (sensors and shooters) to evaluate performance, Concept of Operations, and Tactics, Techniques, and Procedures.</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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 transition from dedicated, first time efforts to less costly missions collecting data to verify earlier results. These verifications further strengthen BMDS-related modeling and simulation, as well as support development of future systems design and concept of operations.				
Title: Near Field Infrared Experiment (NFIRE)		3.358	0.000	0.000
		Articles: 0	0	0
Description: NFIRE satellite delivers critical space, earth phenomenology and missile characterization data for use in the BMDS. NFIRE conducts experiments for U.S. Government Agencies such as hyper temporal collections and participates in a Project Agreement with the government of Germany to conduct laser communications experiments.				
FY 2012 Accomplishments: - Continued On-Orbit Operations at the Missile Defense Space Development Center (MDSDC) to support data collection and analysis on targets of opportunity -- Conducted 29 data collects against a variety of earth limb conditions for future space based infra-red sensors - Conducted cooperative tests with other BMDS elements to include planning, execution and analyses; perform data collection on other targets of opportunity -- Collected on-orbit data to continue building knowledge on boost phase phenomenology for characterization of launch emissions and vapor trails - Continued laser communication experiments to assess viability of the technology - Continued to support, as requested by Air Force Space Command (AFSPC) and other agencies, Space Situational Awareness -- Conducted 22 hypertemporal collects as part of two campaigns to assess availability of the technology - Assess satellite health/utility for potential future utilization				
FY 2013 Plans: Funding for On-Orbit Operations and cooperative tests are planned to continue pending a positive assessment of the Near Field Infrared Experiment (NFIRE) satellite's health and utility. Participation is planned for tests in the Integrated Master Test Plan to include Standard Missile-3 (SM-3) intercept using Space Tracking and Surveillance System Demonstration (STSS-D) Satellites as a remote sensor.				
FY 2014 Plans: In FY 2014, funding for limited On-Orbit Operations and cooperative tests is captured in the BMD Technology Program Element 0603175C in support of Missile Defense Agency (MDA) research and development (contingent on NFIRE end of life decisions/outcomes).				
Title: Element Integration and Testing		2.519	0.000	0.000
		Articles: 0	0	0

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 0603893C: <i>Space Tracking and Surveillance System</i>		PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>Description: STSS-D satellites provide real world data to BMDS Element components to support their software and hardware integration and testing into the Ballistic Missile Defense System (BMDS).</p> <p>FY 2012 Accomplishments: - Conducted planning and execution of Missile Surrogate Testing (Resident Space Objects) - Conducted periodic acquisition/calibration of Demonstration Satellites with ground laser source</p> <p>FY 2013 Plans: In FY 2013, funding and activity associated with performing satellite functionality testing and calibration is captured above under Demonstration Satellites and conducted as part of satellite operations.</p> <p>FY 2014 Plans: N/A</p>				
<p>Title: Advanced Space Operations Development</p> <p align="right">Articles:</p> <p>Description: Risk reduction activities for future space integration and exploitation demonstrating expected architectures, capabilities, Concept of Operations, timelines, etc.</p> <p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: - Develop and refine operational concepts for Missile Defense Agency space systems, sensors, data, services, and networks - Demonstrate connectivity/integration of space sensor layer data for Ballistic Missile Defense System (BMDS) and external users (Space Situational Awareness) - Conduct experiments to test and anchor space systems algorithm validity for BMDS - Demonstrate integration of BMDS space capabilities with other defense and national security systems</p>		0.000 0	0.000 0	1.000 0
Accomplishments/Planned Programs Subtotals		85.224	48.708	42.587

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

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
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	7.940	6.912	6.515		6.515	6.522	7.128	7.289	7.378	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
• 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	0.000	58.742	0.000		0.000	0.000	0.000	0.000	0.000	0.000	58.742

Remarks

D. Acquisition Strategy

The Space Tracking and Surveillance System Demonstration (STSS-D) Satellites program follows the Missile Defense Agency's (MDA) capability-based acquisition strategy that emphasizes testing, incremental development, and evolutionary acquisition. The STSS Demonstration Satellites effort utilizes a single prime contractor, Northrop Grumman Aerospace Systems (NGAS), formerly known as Northrop Grumman Space Technology (NGST), with the subcontractor Raytheon providing the

UNCLASSIFIED

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 0603893C: <i>Space Tracking and Surveillance System</i>	MD12: <i>Space Tracking and Surveillance System (STSS)</i>

sensor payload. This contract implements MDA's capability-based acquisition strategy by using existing satellite hardware as a low risk opportunity, building upon the lessons learned from previous development efforts, and establishing a series of planned enhancements to bring added capability to the BMDS.

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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			
Demonstration Satellites - Capability Based R&D	SS/CPAF	NGAS:Redondo Beach, CA	444.353	49.736		35.491	Oct 2012	31.069	Oct 2013	-		31.069	Continuing	Continuing	Continuing
Demonstration Satellites - STSS Support to Missile Defense Space Development Center (MDSDC)	C/CPAF	MDIOC:CO	4.990	9.970		0.000		1.187	Oct 2013	-		1.187	Continuing	Continuing	Continuing
Demonstration Satellites - Systems Engineering	FFRDC	Aerospace:Los Angeles AFB CA, Schriever AFB CO	43.614	2.308		3.429	Oct 2012	2.188	Oct 2013	-		2.188	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) - Mission Planning/Data Reduction	MIPR	MIT/LL:MA	3.294	0.408		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) - Prime Contract	SS/CPAF	Orbital Sciences Corporation:AZ	8.391	2.950		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Advanced Space Operations Development - Advanced Space Operations Development	Various	Various:Various	0.000	0.000		0.000		1.000	Oct 2013	-		1.000	Continuing	Continuing	Continuing
Subtotal			504.642	65.372		38.920		35.444		0.000		35.444			

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.

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			
Demonstration Satellites - Contract Support Services (CSS)	C/BPA	MDA:AL	11.184	1.305		1.328	Oct 2012	1.245	Oct 2013	-		1.245	Continuing	Continuing	Continuing

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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			
Demonstration Satellites - MDA Civilian	Allot	MDA:AL	5.044	1.233		2.314	Oct 2012	1.732	Oct 2013	-		1.732	Continuing	Continuing	Continuing
Demonstration Satellites - Other Government Agency (OGA) Civilian	MIPR	SMC:CA	9.547	0.607		2.400	Oct 2012	1.201	Oct 2013	-		1.201	Continuing	Continuing	Continuing
Demonstration Satellites - Program Mission Support	Various	SMC:CA	18.832	1.216		0.727	Oct 2012	0.409	Oct 2013	-		0.409	Continuing	Continuing	Continuing
Subtotal			44.607	4.361		6.769		4.587		0.000		4.587			

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			
BMDS Level Testing - BMDS Integration-Test Engineering and Resources	SS/CPAF	NGAS:Redondo Beach, CA	9.603	7.317		3.019	Oct 2012	2.556	Oct 2013	-		2.556	Continuing	Continuing	Continuing
BMDS Level Testing - STSS Demo Analysis Center (SDAC) - Government Verification & Validation (V&V)	MIPR	Various:Various	1.845	0.287		0.000		0.000		-		0.000	0.000	2.132	3.254
BMDS Level Testing - Systems Engineering	FFRDC	Aerospace:Los Angeles AFB CA	16.142	5.368		0.000		0.000		-		0.000	0.000	21.510	21.464
Element Integration and Testing - Ground Support for Acquisition Line-of-Sight Calibration	MIPR	AFRL:Kirtland AFB NM	1.963	0.103		0.000		0.000		-		0.000	0.000	2.066	1.963

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

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			
Element Integration and Testing - STSS Capability Based R&D-Test Support	SS/CPAF	NGAS:Redondo Beach, CA	18.246	2.416		0.000		0.000		-		0.000	0.000	20.662	20.642
Subtotal			47.799	15.491		3.019		2.556		0.000		2.556			

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 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	597.048	85.224	48.708	42.587	0.000	42.587			

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 LCT Experiments/Operations - 1Q2012	▲																											
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-12): THAAD multiple engagement scenario with two near-simultaneous engagements	●																											
NFIRE - TOO- 1Q2012	▲																											
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2012	▲																											
Near Field Infrared Experiment (NFIRE) On-Orbit Operations - 1Q2012-4Q2012	✦	✦	✦	✦																								
STSS Demonstration Satellites On-Orbit Operations - 1Q2012-4Q2012	✦	✦	✦	✦																								
NFIRE - TOO-2Q2012		▲																										
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 2Q2012		▲																										
NFIRE - TOO- 3Q2012			▲																									
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-01): Ground-based Midcourse Defense Intercept Controlled Vehicle Flight Test				◇																								
Aegis Intercept Flight Test (FTM-16 E2a)				◆																								
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 Standard Missile-3 (SM-3) Block 1B engagement of a SRBM target, STSS Engage on Remote Shadow Mode				◆																								
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2012				▲																								
NFIRE - TOO- 4Q2012					▲																							
NFIRE LCT Experiments/Operations - 4Q2012					▲																							
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 4Q2012					▲																							
Aegis Intercept Flight Test (FTM-19): Aegis 4.0.1 intercept of a SRBM target with a SM-3 Block 1B missile, STSS Launch 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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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
Ground-based Midcourse Defense Intercept Flight Test (FTG-06b): Ground-based Midcourse Defense intercept of IRBM target based on results from FTG-06a				○																								
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTI-01): BMDS Developmental Flight Test against SRBM and MRBM targets					●																							
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2013					▲																							
STSS Demonstration Satellites On-Orbit Operations - 1Q2013-4Q2013					✦	✦	✦	✦																				
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2013						△																						
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2013							△																					
Aegis Intercept Flight Test (FTM-22E2): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM								◇																				
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile (MRBM) targets								○																				
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 Short Range Ballistic Missile (SRBM)								◇																				
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								◇																				

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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-BMDS Flight Tests/TOO- 4Q2013								△																				
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014									△																			
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 MRBM									△																			
STSS Demonstration Satellites On-Orbit Operations - 1Q2014-4Q2014									✦	✦	✦	✦																
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014									△																			
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									△																			
Ground-based Midcourse Defense Controlled Test Vehicle (GM CTV-02): GM 3-stage GBI with CE-II EKV demonstration flight test									△																			
Aegis Flight Test (FTM-23): Aegis BMD 5.0 SM-3 Blk IB engagement of a MRBM with remote engagements authorized											△																	
Aegis Intercept Flight Test (FTM-23): Aegis 5.0 intercept of MRBM target with SM-3 Block IB missile											△																	
Aegis Ashore Flight Test (AA CTV-01)											△																	
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2014											△																	
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2014												△																

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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
Ground-based Midcourse Defense Intercept Flight Test (FTG-09): GM 3-stage GBI with CE-II EKV engagement of an IRBM with countermeasures												△																
Aegis Flight Test, Standard Missile (FTM-24): Aegis BMD 4.0.1 SM-3 Blk IB engagement of an MRBM												△																
Aegis Flight Test (FTM-25): Aegis BMD 5.0 CU SM-3 Blk IB multiple simultaneous engagement of two SRBMs in a raid scenario													△															
Aegis Flight Test (FTX-21): Aegis BMD 5.0 CU SBT-1 simulated engagement of a MRBM													△															
Aegis Ashore Intercept Test Flight (AA FTM-02)													△															
Aegis Flight Test (FTM-26): Aegis BMD 5.0 CU SM-3 Blk IB engagement of a SRBM with countermeasures													△															
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015													△															
Aegis Ashore Intercept Flight Test (AA FTM-01)													△															
STSS Demonstration Satellites On-Orbit Operations - 1Q2015-4Q2015														✦	✦	✦	✦											
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015														△														
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/TOO- 3Q2015															△													
Terminal High Altitude Area Defense (THAAD) Intercept Flight Test (FTT-11a): THAAD exo-atmospheric engagement of a complex separating SRBM															△													
Ground-based Midcourse Defense Flight Test (FTX-22): GM simulated engagement of an IRBM with countermeasures (Cobra Dane)																△												

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 Flight Test (FTM-27): Aegis BMD 5.0 CU SBT-1 salvo engagement of a MRBM														△														
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														△														
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015														△														
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															△													
STSS Demonstration Satellites 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																		△										
STSS Demonstration Satellites 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																										△		

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</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 - 1Q2018-4Q2018																													+	+	+	+
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2018																															△	
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2018																																△
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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
NFIRE LCT Experiments/Operations - 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
NFIRE - TOO- 1Q2012	1	2012	1	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 1Q2012	1	2012	1	2012
Near Field Infrared Experiment (NFIRE) On-Orbit Operations - 1Q2012-4Q2012	1	2012	4	2012
STSS Demonstration Satellites On-Orbit Operations - 1Q2012-4Q2012	1	2012	4	2012
NFIRE - TOO-2Q2012	2	2012	2	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 2Q2012	2	2012	2	2012
NFIRE - TOO- 3Q2012	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-16 E2a)	3	2012	3	2012
Aegis Intercept Flight Test (FTM-18): Aegis 4.0.1 Standard Missile-3 (SM-3) Block 1B engagement of a SRBM target, STSS Engage on Remote Shadow Mode	3	2012	3	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2012	3	2012	3	2012
NFIRE - TOO- 4Q2012	4	2012	4	2012
NFIRE LCT Experiments/Operations - 4Q2012	4	2012	4	2012
STSS Demonstration Satellites-BMDS Flight Tests/TOO - 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

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis/Terminal High Altitude Area Defense (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/TOO- 1Q2013	1	2013	1	2013
STSS Demonstration Satellites On-Orbit Operations - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2013	2	2013	2	2013
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2013	3	2013	3	2013
Aegis Intercept Flight Test (FTM-22E2): Aegis 4.0.1 Standard Missile-3 (SM-3) Block IB intercept of a SRBM	3	2013	3	2013
Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test (FTO-01): BMDS Operational Flight Test against Short-Range and Medium-Range Ballistic Missile (MRBM) targets	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 Short Range Ballistic Missile (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
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2013	4	2013	4	2013
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014	1	2014	1	2014
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 MRBM	1	2014	1	2014
STSS Demonstration Satellites On-Orbit Operations - 1Q2014-4Q2014	1	2014	4	2014
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014	2	2014	2	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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
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
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 Flight Test (FTM-23): Aegis BMD 5.0 SM-3 Blk IB engagement of a MRBM with remote engagements authorized	3	2014	3	2014
Aegis Intercept Flight Test (FTM-23): Aegis 5.0 intercept of MRBM target with SM-3 Block IB missile	3	2014	3	2014
Aegis Ashore Flight Test (AA CTV-01)	3	2014	3	2014
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2014	3	2014	3	2014
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2014	4	2014	4	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
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-25): Aegis BMD 5.0 CU SM-3 Blk IB multiple simultaneous engagement of two SRBMs in a raid scenario	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 Test Flight (AA FTM-02)	1	2015	1	2015
Aegis Flight Test (FTM-26): Aegis BMD 5.0 CU SM-3 Blk IB engagement of a SRBM with countermeasures	1	2015	1	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015	1	2015	1	2015
Aegis Ashore Intercept Flight Test (AA FTM-01)	1	2015	1	2015
STSS Demonstration Satellites On-Orbit Operations - 1Q2015-4Q2015	1	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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015	2	2015	2	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/TOO- 3Q2015	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
Ground-based Midcourse Defense Flight Test (FTX-22): GM simulated engagement of an IRBM with countermeasures (Cobra Dane)	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
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
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
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015	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
STSS Demonstration Satellites 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
STSS Demonstration Satellites 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

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 0603893C: <i>Space Tracking and Surveillance System</i>	PROJECT MD12: <i>Space Tracking and Surveillance System (STSS)</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
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
STSS Demonstration Satellites Operations - 1Q2018-4Q2018	1	2018	4	2018
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 0603893C: <i>Space Tracking and Surveillance System</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>	-	1.054	2.605	2.360	-	2.360	1.557	1.731	1.948	1.935	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	1.054	2.605	2.360
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	1.054	2.605	2.360

UNCLASSIFIED

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 0603893C: <i>Space Tracking and Surveillance System</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

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 0603893C: <i>Space Tracking and Surveillance System</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,	0.000	0.000		0.767	Mar 2013	0.516	Mar 2014	-		0.516	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various:Multi: AK/AL/CO/CA/HI/MD/VA/NJ/NY/OCONUS	0.000	1.054		1.821	Mar 2013	1.827	Mar 2014	-		1.827	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPAF	Northrop Grumman:CO	0.000	0.000		0.017	Mar 2013	0.017	Mar 2014	-		0.017	Continuing	Continuing	Continuing
Subtotal			0.000	1.054		2.605		2.360		0.000		2.360			

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	1.054	2.605	2.360	0.000	2.360			

Remarks
N/A

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 style="text-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	FY 2013	FY 2014
<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. 				

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

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

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</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	1,674.244	356.900	366.552	418.355	-	418.355	433.470	454.452	461.991	451.947	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	1,674.244	285.826	194.367	245.129	-	245.129	251.253	273.981	284.174	271.341	Continuing	Continuing
MC01: <i>Cyber Operations</i>	-	0.000	0.000	0.538	-	0.538	0.547	0.556	0.566	0.583	Continuing	Continuing
MT01: <i>C2BMC Test</i>	-	0.000	59.189	54.280	-	54.280	60.328	54.355	48.127	57.999	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	58.525	94.394	96.257	-	96.257	100.261	102.242	103.085	96.970	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	12.549	18.602	22.151	-	22.151	21.081	23.318	26.039	25.054	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 increase of \$42.239 million reflects a realignment of funding from Ballistic Missile Defense Technology Program Element 0603175C to Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element 0603896C to realign funding for Spiral 8.2 Capability Development and Enterprise Sensors Lab.

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 Command and Control, Battle Management and Communications (C2BMC) Program establishes the System by linking together the external sensors and weapons of independent elements into a layered missile defense system such that the whole is more capable and robust than the sum of its parts -- thus increasing the footprint of the Ballistic Missile Defense System (BMDS) with greater performance and defensive coverage. The C2BMC enables the BMDS to manage complex threats -- near simultaneous enemy missile shots aimed at theater, regional, or homeland assets. The systems linked through C2BMC include Phased Array Tracking Radar Intercept on Target (PATRIOT), Terminal High Altitude Area Defense (THAAD), Aegis Ballistic Missile Defense (BMD), Ground Based Midcourse Defense (GMD); and sensors such as the Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar, Sea-Based X-Band Radar (SBX), Space-Based Infrared System (SBIRS), and (BMDS) Overhead Persistent Infra-Red (OPIR) Architecture (BOA). The C2BMC Program will ship a C2BMC

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 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication

Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 to the Pacific Command. The C2BMC program will install communications, support Hardware-in-the-Loop (HWIL) integration testing, provide operations and sustainment, and training.

Based on the Missile Defense Agency's defined architectures and system specifications, the C2BMC program will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently tracking all potential ballistic missile threats, and pairing any sensor with any shooter to defeat ballistic missile threats at any range, in any phase, in all theaters. C2BMC battle management, via the Global Engagement Manager (GEM), will deliver full AN/TPY-2 X-Band radar sensor control and capabilities for improved threat object correlation which calculates a common threat track from multiple sensors through data fusion, with sufficient data accuracy and timeliness for BMDS weapon elements to enable successful engagements via Link-16 and satellite communications. The C2BMC program also works to increase coalition partners' capabilities.

The C2BMC Program will expand defense of the United States, allies, and deployed forces by continuing work that enables a coordinated missile defense against short - to long - range threats in multiple regions/theaters.

One of the best ways to dissuade, deter, and defeat ballistic missile threats is through integrated ballistic missile defense capabilities: weapons; sensors; and command and control, battle management, and communications. A potential or actual attack may cross regions and may fly higher and faster than stand-alone, autonomous capabilities operated by a single Military Service can defend against. Integrated Ballistic Missile Defense (BMD) capabilities draw on space-, land-, and sea-based assets operated by multiple Services to provide the best sensor information about the enemy missiles location and track a more diverse and effective set of weapon options to be used by the Combatant Commander to defeat the attack; with all connected by a unifying Command and Control, Battle Management and Communications (C2BMC) system. As a result, an effort funded in a program element may be critical to the success of efforts in other program elements. These connections are referred to as interdependencies.

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).

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
---	--

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	363.640	366.552	376.116	-	376.116
Current President's Budget	356.900	366.552	418.355	-	418.355
Total Adjustments	-6.740	0.000	42.239	-	42.239
• 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	-6.157	0.000			
• SBIR/STTR Transfer	-0.583	0.000			
• Other Adjustment	0.000	0.000	42.239	-	42.239

Change Summary Explanation

The FY 2014 increase of \$42.239 million reflects a realignment of funding from Ballistic Missile Defense Technology Program Element 0603175C to Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element 0603896C to realign funding for Spiral 8.2 Capability Development and Enterprise Sensors Lab.

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</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
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	1,674.244	285.826	194.367	245.129	-	245.129	251.253	273.981	284.174	271.341	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

RDT&E Articles are defined as major C2BMC capability increments (identified as a specific Spiral) which are fielded at multiple locations including Combatant Commands and other operational sites. Budget Project MD01 includes two RDT&E articles. First, Spiral 6.4, which was successfully completed in FY 2011/FY 2012. Second, Spiral 8.2, which is currently in development and expected to be fielded in FY 2017.

The key test event for development is start of Cycle 2, Simulation-Based Verification, when software completes development and begins testing with other Ballistic Missile Defense System (BMDS) Elements. Completion of Cycle 5, Site Activation Testing, and successful participation in BMDS ground test campaigns, verifies delivery of fully functioning operational software.

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 Command and Control, Battle Management and Communications (C2BMC) Program will provide the warfighter the capability to plan the Ballistic Missile Defense (BMD) fight while concurrently tracking all potential ballistic missile threats, and pairing any sensor with any shooter to defeat ballistic missile threats at any range, in any phase, in all theaters. The C2BMC Program will also work to increase coalition partners` capabilities.

The C2BMC Program will expand defense of the United States, allies, and deployed forces by continuing work that enables a coordinated missile defense against short - to long - range threats in multiple regions/theaters.

Specific goals are to deliver the following, which include BMDS planning, situational awareness, sensor management, and engagement coordination functions incorporated in BMDS Integrated Build C and D specifications approved content:

- Fully integrates BMD Planner and situational awareness displays with integrated intelligence information and defended asset priority schemes

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

- Continuity of Operations Global Engagement Manager (GEM) at Northern Command (NORTHCOM) (Missile Defense Integration and Operations Center (MDIOC))
- Incorporate BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) sensor data for radar and shooter (Aegis, Terminal High Altitude Area Defense (THAAD)) cueing
- Update C2BMC model (BCM), for system-level performance assessments that have been validated against operational C2BMC performance
- Distributed Training System to provide COCOM exercise and training capabilities without scheduling downtime. Training Support System to provide COCOMs and schoolhouses with a flexible and small footprint training capability
- Install more effective network monitoring and computer network defense software and hardware with in C2BMC Control Center (includes the BMDS Network Operations and Security Center (BNOSC))
- Information Assurance (IA) monitoring and modifications of global network devices at all C2BMC locations
- Support system flight and ground testing in accordance with the MDA Integrated Master Test Plan (IMTP)

C2BMC ELEMENT

The Ballistic Missile Defense System (BMDS) Command and Control, Battle Management and Communications (C2BMC) will provide a regional situational awareness and battle management capability at Pacific Command (PACOM), Northern Command (NORTHCOM), European Command (EUCOM) and Central Command (CENTCOM). C2BMC will move to a blade-based computing architecture in Spiral 8.2 to support reliability, maintainability, and modularity.

The Ballistic Missile Defense (BMD) Planner will evolve to a network enabled capability designed to interface with service and allied planning components. Improvements include support for rapid re-planning, enhanced mapping products and services, updating the Air and Missile Defense Workstation (AMDWS) interface to incorporate Terminal High Altitude Area Defense (THAAD), and an initial interface with North Atlantic Treaty Organization (NATO) planning systems.

C2BMC will evolve networked interfaces to expose data over the Secret Internet Protocol Router Network (SIPRNET) providing for display of individual weapon system engagement and coordination information resulting in an integrated common operating picture across the Combatant Commands.

C2BMC battle management, via the Global Engagement Manager (GEM), will deliver full Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) X-Band radar sensor control and capabilities:

- Improved threat object correlation which calculates a common threat track from multiple sensors through data fusion, with sufficient data accuracy and timeliness for BMDS weapon Elements to enable successful engagements via Link-16 and Extremely High Frequency (EHF) satellite communications
- Incorporation of BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) and upgraded Space Based Infra-Red System (SBIRS) sensor data
- Improved BMD system discrimination logic using multiple sensors discrimination results, selecting the best result, and assigning object type to common threat tracks
- Sensor management and weapons engagement coordination aids to direct the BMDS fight and make efficient use of limited inventory

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

C2BMC Spiral 8.2 Distributed Training System (DTS) planning and development enables COCOMs to support large-scale exercises and training events without scheduling downtime of operations. The DTS will stimulate C2BMC operational screens at COCOM Air Operations Center (AOC), Maritime Operations Center (MOC), and Headquarters. Capabilities will support training with theater/regional assets and coalition partners, and updated simulations to represent current BMDS system capabilities. C2BMC Spiral 8.2 Training Support System (TSS) planning and development provides a flexible scenario and small footprint training system for small scale COCOM training events and schoolhouses. The TSS will integrate with Missile Warning and Air Operations Center training systems to provide an integrated training system.

The Ballistic Missile Defense (BMD) Communications Network ties together an expanding set of sensors and weapons systems enabling the National Command Authority and the commanders at the strategic, theater and tactical levels to optimally engage ballistic missile threats including near simultaneous theater, regional and homeland attacks. The BMD Communications Network provides a robust, end-to-end, high availability, operational communications network (COMNET) infrastructure with diverse paths that quickly and unambiguously shares information across the global Ballistic Missile Defense System (BMDS). This sharing of information is performed securely with special emphasis on preventing cyber attack via the C2BMC Control Center (includes the BMDS Network Operations and Security Center (BNOSC)). The C2BMC system and networks are protected by layered defenses that start with circuits comprising the BMDS Communications Network (BCN) that are isolated from the known networks. Where the BCN and the known networks meet, layers of firewalls, encryption devices, routers and switches each with specific access control lists (ACLs), further protect the internal systems and allow only identified and approved users and systems access to the C2BMC data. Effective network management will coordinate and integrate across diverse equipment platforms, interface with other DoD communications systems, evolve information standards and capabilities, and will adhere to the DoD Information Assurance Certification and Accreditation Process (DIACAP). Defense Information Systems Agency (DISA) services are also leveraged in providing world-wide communications. Planned improvements such as dynamic real-time network management and monitoring will enable the warfighter to monitor the connection to BMDS weapons and anticipate and remedy issues as they occur.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Spiral Development</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Continued systems engineering to provide the System Description Document and the Integrated Build C and Build D specifications for the Elements to design, build, integrate and test BMDS components. The BMDS Integrated Build C specification directed limited peer-to-peer engagement coordination, sensor, resource management, initial multi-radar capability, warfighter planning, warfighter enhancements, and improved situational awareness - Continued BMDS Integrated Build D specification to incorporate the communications enhancements adding improved correlation, initial BMDS system track, and expanded BMDS C2BMC interfaces with Friends and Allies - Awarded follow on contract to continue development 	<p>222.014</p> <p>0</p>	<p>151.324</p> <p>0</p>	<p>195.780</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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Continued Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration - Refined and expanded the C2BMC planned architecture to incorporate Enhanced C2BMC advanced technology development in integrated discrimination and data fusion and tasking techniques using RF, infrared, advanced remote, and JOG (Joint OPIR Ground Study) sensors - Validated BMDS C2BMC model (BCM) with Critical Engagement Conditions (CECs) for system-level performance assessments. CEC are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - The C2BMC Program collected CEC data to verify models and simulations for Spiral 6.4C operations. - Continued to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgraded DoD teleports to enhance satellite communications (SATCOM) connectivity and add additional Combatant Commands to operations - Updated production drawings and installation procedures - Acquired and installed Enterprise Work Stations (EWS), web browsers, and BMD Planners - Operated Spiral 6.2 and completed upgrade to Spiral 6.4C at Central Command (CENTCOM) - The C2BMC Program fielded a C2BMC Deployable Interface Node (CDIN) with a forward based AN/TPY-2 - The C2BMC program also upgraded existing suite to Spiral 6.4 suite for Central Command (CENTCOM), installed communications, supported hardware-in-the-loop (HWIL) integration testing, provided operations and sustainment, and added a training suite in CENTCOM. - Operated the new Spiral 6.4C Global Engagement Manager (GEM) hardware at European Command (EUCOM), Northern Command (NORTHCOM), Strategic Command (STRATCOM), Pacific Command (PACOM) - Continued to incorporate C2BMC Advanced Technologies and prototypes into the Enhanced C2BMC architecture - Identified and acquired the long-haul terrestrial communications circuits to support the European Phased Adaptive Approach (EPAA) Phase 1 Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) site in EUCOM - Upgraded the BMDS Communications Networks (BCN) communications systems at the Pacific Missile Range Facility to support the testing of the European Phase Adaptive Approach (EPAA) Phase 2 concept - Initiated Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Continued Active Layered Theatre Ballistic Missile Defense (ALTBMD) Systems Engineering - Completed North Atlantic Treaty Organization (NATO) Architecture Design Review - Completed Situational Awareness Node at Eskisehir, Turkey 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>- Participated in the development of NATO Staff Requirements (NSR) for new NATO Territorial Defense Mission</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Continue Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration - Update C2BMC model, validated by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), for system-level performance assessments. CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity and add additional Combatant Commands to operations - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Integrate BMDS Overhead Architecture (BOA) into spiral 8.2 C2BMC - Develop the initial BMDS C2BMC Model for Spiral 8.2 - Continue development of Spiral 8.2 software, hardware, and network capability - Design, procure, and integrate Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Complete development and testing of new BMDS Overhead Architecture (BOA) baseline release to support Spiral 8.2 integration and testing - Complete development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Spiral 8.2 will prototype and deliver the Two-Factor Authentication (Smart-card) capability on a classified weapons system. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. <ul style="list-style-type: none"> - Finalize the C2BMC Command and Control (C2) and battle management architecture, including Enhanced C2BMC advanced technologies, to fulfill the European Phase Adaptive Approach (EPAA) 3/4 Architecture - Complete requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 3 requirements - Complete a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Complete NATO Capability 2 Interface Control Documents (ICDs)</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue Spiral 8.2 engineering and design and BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration - Update C2BMC model, validated by Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), for system-level performance assessments. CEC/EMEs are the conditions and events where data is obtained from flight and ground tests in order to anchor system models and simulations - Continue to upgrade the BMD Communications Network capability (development, integration and test) to support European Phase Adaptive Approach (EPAA) - Upgrade DoD teleports to enhance satellite communications (SATCOM) connectivity - Acquire and install Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continue Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Continue development of the BMDS C2BMC Model for Spiral 8.2 modeling and simulation - Continue development of Spiral 8.2 software, hardware, and network capability - Design, procure, and integrate Spiral 8.2 test infrastructure and tools at Missile Defense Integration and Operations Center (MDIOC) to support Spiral 8.2 verification testing and distributed testing support - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Complete development and testing of new BMDS Overhead Architecture (BOA) baseline release to support Spiral 8.2 integration and testing - Complete development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Spiral 8.2 will prototype and deliver the Two-Factor Authentication (Smart-card) capability on a classified weapons system. Additional improvements to remote administration of the systems, remote monitoring and event response will improve the security configuration management of this growing architecture. Automated anti-virus and patch management will allow for faster deployment of critical patches and anti-virus signatures keeping the systems secured in a timely manner. - Complete a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design - Complete NATO Capability 2 Interface Control Documents (ICDs) - Continue development of capabilities addressing EPAA Phase 3 requirements resulting in an upgraded Spiral with plan load during operations, protection capability (PROCAP) functionality, record and playback, a BOA 6.1 release, and engage on remote support with Aegis 5.1. Task initiated in FY 2013 in Budget Project MD25, PE 0603175C and scheduled for completion to support GTX-07a (FY 2017). - Deliver a C2BMC Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 deployment to PACOM. 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
- Complete requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 4 requirements				
Increase due to a realignment of funding from Ballistic Missile Defense Technology Program Element 0603175C to Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element 0603896C to realign funding for Spiral 8.2 Capability Development.				
Title: Integrated Master Test Plan		32.084	0.000	0.000
		0	0	0
Articles:				
Description: N/A				
FY 2012 Accomplishments:				
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests (to include FTI-01), wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Planned, collected data, assessed, examined, and reported on C2BMC spiral integration testing - Supported interoperability and integration of the BMDS program elements - Supported the field testing of the European Deployment - Sustained the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training - Provided infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> --C2BMC Control Center (CCC) --System Test and Operations Center (STOC) --BMDS Communications Network (BCN) --Parallel Staging Network (PSN) --BMDS Network Operations and Security Center (BNOSC) - Continued BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conducted concept development for virtualized C2BMC services, service oriented architectures - Conducted initial prototypes and associated operations with Concurrent, Test, Training, and Operations (CTTO) interfaces and architectures - Conducted North Atlantic Treaty Organization (NATO) Multi-National Ensemble Test #2 - Conducted Exercises Rapid Arrow 2012 German/Dutch Live Fire Event and Austere Challenge 2012 				
FY 2013 Plans:				

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

FY 2013 Plans are reported in budget project MT01 \$59.189 million			
FY 2014 Plans: FY 2014 Plans are reported in budget project MT01 \$54.280 million			

Title: C2BMC Experimentation Lab (X-Lab)	7.311	12.199	4.733
Articles:	0	0	0

Description: N/A

FY 2012 Accomplishments:

The X-Lab communications effort focuses on developing the next generation command and control and battle management concepts and the enabling technologies required to implement them among the BMDS. These activities will develop, integrate, and demonstrate in a system of systems concept, the Command and Control, Battle Management and Communications (C2BMC) and enabling technologies for improving BMDS performance across all mission areas and layers of defense including Early Intercept (EI) to include defense of friends and allies. BMDS integration concepts and techniques are demonstrated and evaluated in system-wide flight tests to facilitate the transition to the operational C2BMC.

- Enabled integration of new capabilities into C2BMC Spiral 8.2 through performance characterization of Spiral 6.4 and Spiral 8.2 prototypes
- Demonstrated and evaluated new C2BMC capabilities in live-flight test events
- Continued to evolve warfighter concept of operations (CONOPS) to insert new subsystems and capabilities into the BMDS in the areas of boost phase tracking and classification, sensor resource management, weapons resource management, and post-intercept debris information flow
- Continued to develop and demonstrate sensor resource management techniques with enhanced tracking under communications and bandwidth constraints
- Continued to support the efforts of the Enhanced C2BMC program to develop the Integrated Sensor Manager and to prototype the interface between C2BMC and the Integrated Sensor Manager. Capability improvements have been demonstrated through a series of integrated experiments (simulation events, hardware-in-the-loop tests, and system-wide flight tests)
- Conducted architecture assessments of BM functions federated within C2BMC
- Integrated the CONOPS information and BM integration priorities for advanced and emerging BMDS capabilities (such as Early Intercept and Space Tracking and Surveillance System (STSS)) into battle management constructs
- Refined C2BMC interfaces to BMDS Elements and Sensors

FY 2013 Plans:

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

The C2BMC Experimentation Lab (X-Lab) will focus on prototyping, demonstrating, and analyzing new C2BMC capabilities that will enable (1) status reporting and tasking of BMDS elements, (2) integrated battle management with smart allocation of sensor, shooter and other critical resources, (3) robust communications between BMDS elements, and (4) a C2BMC architecture that meets near term needs while enabling future growth. While the focus of the X-Lab is on demonstrating the feasibility of new capabilities for insertion into future C2BMC cycles, Spirals 8.2 and 6.4; the X-Lab will also assess current Spiral 6.4 C2BMC capabilities to establish baselines for performance metrics and to assist in verifying requirements. The FY 2013 focus will be:

- Tasking of Aegis, THAAD, and infrared sensors through cues from space based assets and other BMDS assets: Spirals 6.4 and 8.2
- Demonstrating the communications, CONOPS and cueing logic required for ensuring a remote engagement authorized quality cue is generated and forwarded to Aegis: Spiral 8.2
- Evaluating C2BMC architectures to include evaluation of the BMDS Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance in the Space Based Infrared Systems (SBIRS) Operations Migration Capability (OMC) environment: Spiral 8.2
- Demonstrating communications and CONOPS to deliver a boost or ballistic cue to Space Tracking and Surveillance System (STSS) as a Precision Tracking Space System (PTSS) surrogate in flight tests
- Prototyping battle management capabilities using associated-features track processing, system level discrimination, and pass BMDS sensor generated cues to external sensors for hit assessment

FY 2014 Plans:
The C2BMC Experimentation Lab (X-Lab) prototypes and demonstrates new C2BMC capabilities. The FY 2014 focus will be:

- Evaluate algorithms and data distribution architectures for transmitting system tracks that include features. This will enable weapon systems to form Target Object Maps that allow an engagement beyond line of sight of the organic radar to utilize the full extent of the physical range of the interceptor (Engage-on-Remote)
- Develop interfaces and data distribution architectures that implement a common cueing protocol with the Joint Overhead Persistent Infra-Red (OPIR) Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures to improve efficiency in cueing and decrease sustainment costs
- Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development process

In support of IMTP, X-Lab Test is found in budget project MT01 (\$5.422 million).

Decrease due to Spiral 8.4 deferral reduced X-Lab support and prototyping in FY 2014.

Title: C2BMC Communications	24.417	30.844	39.223
Articles:	0	0	0

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Deployed CDIN to CENTCOM to support AN/TPY-2 fielding - Upgraded BMDS Teleports to V6.05 - Initiated planning and site prep for terrestrial fiber communications at Site K - GMD Long Haul Communications - Engineered, designed and planned for procurement and installation of radome on MET antenna, upgraded electrical systems and performed associated site preparation at Ramstein AFB - Continued development of the Protected Anti-jam/Anti-scintillation Net-Centric Systems (PAAWNS) - Supported exercises and tests of the AN/TPY-2 radar system with BMDS Communications Networks (BCN) support systems - Continued BMDS communications system integration and certifications <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Design and implement redundant fiber path in support of Clear Air Force Station (AFS) Upgraded Early Warning Radar (UEWR) integration into the Ballistic Missile Defense System (BMDS) - Upgrade SBX SATCOM capability and transition land-side terminal service to COMSAT terminals at FGA and VAFB - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Install AN/GSC-52B SATCOM terminal at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Perform High Altitude Electromagnetic Pulse (HEMP) upgrade Building 543 at Ramstein AFB - Continue support for C2BMC 6.4 in EUCOM, STRATCOM, NORTHCOM, PACOM, and CENTCOM - Continue development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout) - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Resolve real-time operational issues through the C2BMC Control Center and BNOSC - Operate BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide global BMDS communications via leased DISA circuit lines - Provide and support communications circuits for fielded C2BMC locations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide support of AN/TPY-2 radar communications nodes - Acquire and install Enterprise Work Stations, Web Browsers, and Planners per warfighter requirements <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Design and implement redundant fiber path in support of Clear Air Force Station (AFS) Upgraded Early Warning Radar (UEWR) integration into the Ballistic Missile Defense System (BMDS) - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Install AN/GSC-52B SATCOM terminal at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Perform High Altitude Electromagnetic Pulse (HEMP) upgrade Building 543 at Ramstein AFB - Continue support for C2BMC 6.4 in the European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM) - Continue development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management) - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes BMDS Network Operations and Security Center (BNOSC)) - Operate CCC (includes BNOSC) 24 hours a day, 7 days a week, 365 days a year - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations to ensure continued performance and operations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations - Acquire and install Enterprise Work Stations, Web Browsers, and Planners <p>Increase due to the acquisition and deployment of an additional C2BMC Deployable Interface Node (CDIN).</p>			
<p>Title: Enterprise Sensors Lab (ESL)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p>	0.000 0	0.000 0	5.393 0

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
FY 2012 Accomplishments are reported in budget project MD25 PE 0603175C			
<i>FY 2013 Plans:</i> FY 2013 Plans are reported in budget project MD25 PE 0603175C			
<i>FY 2014 Plans:</i> The Enterprise Sensors Lab (ESL) prototypes and demonstrates algorithms that fuse space, airborne, and terrestrial-based sensor data to provide three-dimensional (3-D) tracks of threat missiles to enable sensor cueing and Launch/Engage-on-Remote (LOR/EOR) using all sensors. Additionally, ESL extracts features in support of hit assessment with a goal of enabling a shoot-look-shoot capability. The FY 2014 focus will be: - Incorporate the Space Based Infra-Red System (SIBRS) Geosynchronous Earth Orbit Starer and other new Overhead Persistent Infra-Red (OPIR) sensors to form a more accurate 3-D track - Develop a joint Infrared/Radio Frequency algorithm library to enable sensor data fusion to be incorporated into multiple systems with improved efficiency and reduced maintenance costs - Prototype algorithms to extract dimmer targets from sensor data to extend the length of the track and enable additional sensor cueing opportunities -In support of the Integrated Master Test Plan (IMTP), ESL test support is found in MT01 (\$5.670 million)			
Increase due to a realignment of funding from Ballistic Missile Defense Technology Program Element 0603175C to Ballistic Missile Defense Command and Control, Battle Management and Communications Program Element 0603896C to realign funding for ESL.			
Accomplishments/Planned Programs Subtotals	285.826	194.367	245.129

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>
• 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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

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>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 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
• 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

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned

UNCLASSIFIED

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>

for Spiral 8.4 to support Phased Adaptive Approach (PAA) 4. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</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			
Spiral Development - C2BMC HW/SW Development, I&T	SS/CPAF	Lockheed Martin Team:Huntsville, AL	35.970	2.148		0.000		0.000		-		0.000	0.000	38.118	38.118
Spiral Development - C2BMC Hardware(HW)/ Software(SW) Development, Integration & Test (I&T)	SS/CPAF	Lockheed Martin Team:Colorado Springs, CO	393.398	14.177		0.000		0.000		-		0.000	0.000	407.575	251.587
Spiral Development - C2BMC Hardware/ Software Development, Integration & Test (I&T)	SS/IDIQ	Lockheed Martin Team:Arlington, VA	0.000	117.929		106.443	Dec 2012	112.709	Dec 2013	-		112.709	Continuing	Continuing	Continuing
Spiral Development - C2BMC Integration	Various	Services DISA Agency:-	110.956	14.091		2.713	Oct 2012	19.789	Oct 2013	-		19.789	Continuing	Continuing	Continuing
Spiral Development - C2BMC Product Engineering & Development	SS/CPAF	Lockheed Martin Team:Arlington, VA	445.434	26.636		0.000		0.000		-		0.000	0.000	472.070	472.070
Spiral Development - Common Threat Engineering	C/CR	Various:Various	1.684	0.000		0.000		0.000		-		0.000	0.000	1.684	1.684
Spiral Development - Concurrent Test Training and Operations (CTTO)	SS/CPAF	Northrop Grumman Boeing:Colorado Springs, CO	9.437	0.000		0.000		0.000		-		0.000	0.000	9.437	9.437
Spiral Development - Concurrent Test Training and Operations (CTTO) Test/Training Enhancements	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	64.286	0.000		0.000		0.000		-		0.000	0.000	64.286	64.286
Spiral Development - Contract Support Services	SS/FFP	Cobham Analytic Solutions, Paradigm, CACI, CSC:Arlington, VA/ Huntsville, AL	112.496	20.193		15.124	Oct 2012	24.338	Oct 2013	-		24.338	Continuing	Continuing	Continuing

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</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			
Spiral Development - Federally Funded Research & Development Centers / University Affiliated Research Center	MIPR	MITRE, IDA, ORNL, Aerospace, JHU/APL, GTRI:Arlington, VA/Huntsville, AL/Colorado Springs, CO	62.742	15.745		12.065	Oct 2012	16.140	Oct 2013	-		16.140	Continuing	Continuing	Continuing
Spiral Development - MDA Civilian, Travel & PCS	Various	:-Arlington, VA/Huntsville, AL/Colorado Springs, CO	33.683	11.095		14.979	Oct 2012	22.804	Oct 2013	-		22.804	Continuing	Continuing	Continuing
Spiral Development - Operations and Support (O&S) Communication Leases	IA	DISA:Scott AFB, IL	34.691	0.000		0.000		0.000		-		0.000	0.000	34.691	34.691
Spiral Development - Operations and Support (O&S) DOTMLPF	IA	SETAC:-	2.000	0.000		0.000		0.000		-		0.000	0.000	2.000	Continuing
Spiral Development - Operations and Support (O&S) Indirect Support	MIPR	DISA DECC:Pensacola, FL	19.065	0.000		0.000		0.000		-		0.000	0.000	19.065	19.065
Spiral Development - Operations and Support (O&S) Unit Personnel, Control System Improvement, Sustaining Support	SS/CPAF	Lockheed Martin Team:Arlington, VA	183.285	0.000		0.000		0.000		-		0.000	0.000	183.285	183.285
Spiral Development - Operations and Support (O&S) Warfighter Training	SS/CPAF	Lockheed Martin Team:Arlington, VA	2.665	0.000		0.000		0.000		-		0.000	0.000	2.665	2.665
C2BMC Experimentation Lab (X-Lab) - X-Lab	SS/CPAF	Various / Northrop Grumman Mission Systems:Colorado Springs, CO	11.898	7.311		12.199	Oct 2012	4.733	Oct 2013	-		4.733	Continuing	Continuing	Continuing

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</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			
C2BMC Communications - BNOSC	SS/CPAF	Lockheed Martin Team / JRDC:Colorado Springs, CO	0.000	6.761		6.900	Oct 2012	3.224	Oct 2013	-		3.224	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding	SS/CR	DISA, PMDCATS, SPAWAR:Various	34.994	4.986		16.051	Oct 2012	25.250	Oct 2013	-		25.250	Continuing	Continuing	Continuing
C2BMC Communications - Communication Leases	SS/CR	DISA:Arlington, VA	0.000	6.200		6.143	Oct 2012	8.949	Oct 2013	-		8.949	Continuing	Continuing	Continuing
C2BMC Communications - EMR, EIS, ECI Communications	MIPR	Various:Various	63.904	0.000		0.000		0.000		-		0.000	0.000	63.904	63.904
C2BMC Communications - EUCOM Communications	MIPR	USAFE :Ramstein, DE	0.000	6.470		1.750	Oct 2012	1.800	Oct 2013	-		1.800	Continuing	Continuing	Continuing
C2BMC Communications - GCN Transition	IA	DISA:Various	18.000	0.000		0.000		0.000		-		0.000	0.000	18.000	18.000
Enterprise Sensors Lab (ESL) - Enterprise Sensor Lab	SS/CPAF	Northrop Grumman:Colorado Springs, CO	0.000	0.000		0.000		5.393	Oct 2013	-		5.393	Continuing	Continuing	Continuing
Subtotal			1,640.588	253.742		194.367		245.129		0.000		245.129			

Remarks
 Funding for Operations and Sustainment is captured in Budget Project MX01 in FY 2012

In order to more accurately capture the aggregate program of work for C2BMC, in FY 2012 the PE consolidated communications support and equipment funding that traditionally was aligned to other program elements planned activities (e.g., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</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			
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			
Spiral Development - BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	13.430	0.000		0.000		0.000		-		0.000	0.000	13.430	13.430
Integrated Master Test Plan - BMDS Level Testing-	SS/IDIQ	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	0.000	11.697		0.000		0.000		-		0.000	0.000	11.697	11.697
Integrated Master Test Plan - BMDS Level Testing	SS/CPAF	Lockheed Martin Team:Arlington, VA/Huntsville, AL/ Colorado Springs, CO	0.000	3.020		0.000		0.000		-		0.000	0.000	3.020	3.020
Integrated Master Test Plan - BMDS Level Testing (Element/System Test Lab Facilities)	SS/CPAF	JRDC:Colorado Springs, CO	20.226	17.367		0.000		0.000		-		0.000	0.000	37.593	37.593
Subtotal			33.656	32.084		0.000		0.000		0.000		0.000	0.000	65.740	65.740

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>
---	--	---

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			

Remarks
 In order to more accurately capture the aggregate program of work for C2BMC, in FY 2012 the PE consolidated communications support and equipment funding that traditionally was aligned to other program elements planned activities (e.g., communications in support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) fielding).

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	1,674.244	285.826	194.367	245.129	0.000	245.129			

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-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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</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
MC01: <i>Cyber Operations</i>	-	0.000	0.000	0.538	-	0.538	0.547	0.556	0.566	0.583	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 MC01 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD01 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 Command and Control, Battle Management and Communications (C2BMC) 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 Cybersecurity 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	0.538
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans:			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
N/A			
<i>FY 2014 Plans:</i>			
-Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems.			
-Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems.			
-Develop C2BMC DIACAP certification and accreditation packages.			
-Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.			
-Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.538

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MC01: <i>Cyber Operations</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			
Network/System Certification and Accreditation (C&A) - IA/ CND Network/System C&A	C/CPFF	Torch Technologies:Various	0.000	0.000		0.000		0.538	Jul 2014	-		0.538	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.538		0.000		0.538			

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	0.538	0.000	0.538			

Remarks
N/A

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</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
MT01: <i>C2BMC Test</i>	-	0.000	59.189	54.280	-	54.280	60.328	54.355	48.127	57.999	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

TESTING
 To ensure C2BMC capabilities delivered are consistent with the Priorities Capabilities List and are interoperable with other Ballistic Missile Defense System (BMDS) components, C2BMC will support system flight and ground testing as detailed in the MDA Integrated Master Test Plan (IMTP).

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

	FY 2012	FY 2013	FY 2014
<p>Title: Integrated Master Test Plan</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: FY 2012 Plans are reported in budget project MD01 \$32.084 million</p> <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP) - Plan, collect data, assess, examine, and report on C2BMC spiral integration testing - Support interoperability and integration of the BMDS program elements - Support the field testing of the European Deployment - Sustain the C2BMC Components of the Distributed Multi-Echelon Distributed Training system (DMETS) in the conduct of BMDS-level wargames, exercises, and training - Provide infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> - C2BMC Control Center (CCC) - System Test and Operations Center (STOC) 	0.000 0	59.189 0	54.280 0

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Ballistic Missile Defense System (BMDS) Communications Network (BCN) - Parallel Staging Network (PSN) - BMDS Network Operations and Security Center (BNOSC) - Continue BMD OPIR Architecture (BOA) performance assessments, integration, and testing - Conduct concept development test for virtualized C2BMC services, service oriented architectures - CTTO Network Architectures - Conduct initial prototypes and associated operations with CTTO interfaces and architectures - Conduct NATO Multi-National Ensemble Test #3 / Joint Project Optical Windmill (JPOW) 2013 - Conduct Exercise Rapid Arrow 2013 German/Dutch Live Fire Event <p>FY 2014 Plans: Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP)</p> <ul style="list-style-type: none"> - Plan, collect data, assess, examine, and report on C2BMC spiral integration testing - Support interoperability and integration of the BMDS program elements - Support the field testing of the European and Central Command Deployments - Support European Phased Adaptive Approach (EPAA) Phase II-IV Situational Awareness (SA) Node deployments - Provide infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -- C2BMC Command Center (CCC) (Includes BMDS Network Operations and Security Center (BNOSC)) -- System Test and Operations Center (STOC) -- Ballistic Missile Defense System (BMDS) Communications Network (BCN) -- Parallel Staging Network (PSN) -- Distributed Multi-Echelon Distributed Training system (DMETS) -- Distributed Training system (DTS) - Initial build-out of Spiral 8.2 Testbed - Continue BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conduct concept development test for virtualized C2BMC services, service oriented architectures - Conduct Exercise Rapid Arrow 2014 German/Dutch Live Fire Event <p>Enterprise Sensors Laboratory (ESL):</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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>		PROJECT MT01: <i>C2BMC Test</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>-Demonstrate prototype algorithms for track and measurement level sensor data fusion and feature extraction through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds test operations for the capabilities established in the Enterprise Sensors Laboratory and described in Project MD01.</p> <p>-Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable assessments of track accuracy improvements resulting from incorporation of Space Based Infra-Red System (SIBRS) Geosynchronous Earth Orbit Starer and other new Overhead Persistent Infra-Red (OPIR) sensors</p> <p>-Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable effectiveness evaluations of sensor data fusion enabled through the incorporation of radio frequency data into the existing ESL Infrared three-dimension track formulation processes.</p> <p>-Plan, coordinate, and provide test operations utilizing ESL prototypes to produce data to enable characterization of the capability to extract information from observations of dim upper stages of threat systems and the ability to exploit features extracted from available sensor resource data.</p> <p>-Compile and provide test and demonstration results back to the algorithms development activity in Project MD01 to enable algorithm refinement</p> <p>C2BMC Experimentation Lab (X-Lab):</p> <p>- Demonstrate maturing C2BMC technologies and software builds through flight tests, ground tests and real-world targets of opportunities before incorporation into formal C2BMC spiral builds. Project MT01 funds the test operations for the capabilities established in the X-Lab facility and described in Project MD01.</p> <p>-Plan, coordinate, and provide test operations utilizing maturing C2BMC technologies to produce data to enable evaluation of architecture schemas for system track data distribution and common cueing protocols across the Joint OPIR Ground (JOG), Space Based Infra-Red System (SBIRS), and MDA system architectures.</p> <p>-Host and test Spiral 8.2 engineering releases</p> <p>-Compile and provide test and demonstration results back to the development activity in Project MD01 for architecture refinement activities and Spiral 8.2 performance evaluation</p> <p>Decrease due to the FY 2013 completion of a Spiral 8.2 lab build-out in the Missile Defense Integration and Operations (MDIOC)</p>				FY 2013
				FY 2014
Accomplishments/Planned Programs Subtotals				0.000
				59.189
				54.280

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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
• 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
• 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

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on

UNCLASSIFIED

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	MT01: <i>C2BMC Test</i>

contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 to support Phased Adaptive Approach (PAA) 4. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</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			
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			
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure	SS/CPAF	Northrop-Grumman Corporation :Colorado Springs, CO	0.000	0.000		0.000		1.100	Oct 2013	-		1.100	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support	MIPR	Various :VA; OH; AL;NM; CA	0.000	0.000		0.000		4.570	Oct 2013	-		4.570	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master Test Plan BMDS Level Testing	SS/IDIQ	Lockheed Martin Team:Arlington, VA,Huntsville, AL,Colorado Springs, CO	0.000	0.000		21.853	Dec 2012	19.909	Dec 2013	-		19.909	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master Test Plan BMDS level	SS/CPAF	Northrop-Grumman Corporation:Colorado Springs, CO	0.000	0.000		37.336	Oct 2012	28.701	Oct 2013	-		28.701	Continuing	Continuing	Continuing

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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 (Element/System Test Lab Facilities)															
Subtotal			0.000	0.000		59.189		54.280		0.000		54.280			

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

	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	59.189	54.280	0.000	54.280			

Remarks
N/A

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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

	FY 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)	▲																											
FTP-05 (PATRIOT Intercept Flight Test)	▲																											
European Phase Adaptive Approach (EPAA)-1 Capability Declaration	▲																											
Arrow Flight Test - FY 2012		▲																										
GTX-04e (BMDS Focused Ground Test)		▲																										
Fast Eagle Increment 1			▲																									
FTM-18 (Aegis Intercept Flight Test)			▲																									
FTM-16 E2a (Aegis Intercept Flight Test)			▲																									
FTP-06 (PATRIOT Intercept Flight Test)				▲																								
Fast Eagle Increment 1 (Follow On)				▲																								
FTP-07 (PATRIOT Intercept Flight Test)				▲																								
FTG-06b (GM Intercept Flight Test)				△																								
FTM-19 (Aegis Intercept Flight Test)				△																								
GTD-04e EUCOM (BMDS Distributed Ground Test)				✦	✦																							
FTI-01 (FTO-01 Risk Reduction Flight Test)				▲																								
GTD-04e CENTCOM (BMDS Distributed Ground Test)				✦	✦																							
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)					✦	✦																						
FTO-01 (Operational Test)					✦	✦																						
FTM-21 E1/E2/E3 (Aegis Flight Test)						△																						
FTM-22 E2 (Aegis Intercept Flight Test)						△																						
AST-14 (Arrow WS Intercept Flight Test)						△																						
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)						✦	✦																					
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)						✦	✦																					
Install Spiral 8.2 Mission Node - Ground Test							✦	✦																				
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed							✦	✦	✦																			
Install Spiral 8.2 Management Node - C2BMC Testbed							✦	✦	✦																			
SCDPTV-01 (Aegis Flight Test)								△																				

UNCLASSIFIED

Exhibit R-4, RDT&E Schedule Profile: 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 0603896C: *Ballistic Missile Defense Command and Control, Battle Management & Communication*

PROJECT

MT01: *C2BMC Test*

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
FTX-20 (Aegis Simulated Intercept Flight Test)																												
GTD-04e Part 2 (BMDS Ground Test)																												
Israeli Cooperative Intercept Flight Test - FY 2014																												
GTI-ISR-14 (BMDS Ground Test)																												
FTX-18 (Aegis Simulated Intercept Flight Test)																												
FTX-19 (Aegis Simulated Intercept Flight Test)																												
GM CTV-02 (GM Non Intercept Flight Test)																												
AA CTV-01 (Aegis Ashore Flight Test)																												
FTM-23 (Aegis Intercept Flight Test)																												
Fast Event 1																												
Fast Event 2																												
GTX-06 (BMDS Ground Test)																												
FTM-24 (Aegis Intercept Flight Test)																												
FTG-09 (GM Intercept Flight Test)																												
GTI-06 Part 1 (BMDS Ground Test)																												
AA FTM-01 (Aegis Ashore Intercept Flight Test)																												
AA FTM-02 (Aegis Ashore Intercept Flight Test)																												
FTM-25 (Aegis Intercept Flight Test)																												
FTM-26 (Aegis Intercept Flight Test)																												
FTX-21 (Aegis SBT Simulated Intercept Flight Test)																												
Israeli Cooperative Intercept Flight Test - FY 2015																												
SCDCTV-01 (Aegis Flight Test)																												
GTD-06 Part 1 (BMDS Ground Test)																												
FTM-27 (Aegis Intercept Flight 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)																												
SCDCTV-02 (Aegis Flight Test)																												
FTG-11 (GM Intercept Flight Test) (Salvo)																												

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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

	FY 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
GTD-06 Part 2 (BMDS Ground Test)																												
GTX-07a (BMDS Ground Test)															◆	◆												
Israeli Cooperative Intercept Flight Test - FY 2016															◆	◆	◆	◆										
GTI-07a (BMDS Ground Test)															◆	◆	◆											
SFTM-01 E1 (Aegis Simulated Intercept Flight Test)																△												
SFTM-01 E2 (Aegis Intercept Flight Test)																△												
FTX-23 (Aegis Flight Test)																△												
FTG-15 (GM Intercept Flight Test)																	△											
GTD-07a Part 1 (BMDS Ground Test)																	◆	◆										
SFTM-02 (Aegis Intercept Flight Test)																		△										
FTX-24 (Aegis SBT Flight Test)																		△										
Spiral 8.2 Tri-Node Capability Declaration																			△									
Israeli Cooperative Intercept Flight Test - FY 2017																			◆	◆	◆	◆						
GTD-07a Part 2 (BMDS Ground Test)																			◆	◆								
FTT-15 (THAAD Intercept Flight Test)																				△								
Spiral 8.2 EUCOM Capability Declaration																					△							
GTX-07b (BMDS Ground Test)																				◆	◆	◆						
FTM-28 (Aegis Intercept Flight Test)																					△							
Spiral 8.2 CENTCOM Capability Declaration																						△						
FTG-13 (GM Intercept Flight Test)																							△					
GTI-07b (BMDS Ground Test)																							◆	◆	◆			
FTM-30 (Aegis Intercept Flight Test)																								△				
FTM-31 (Aegis Intercept Flight Test)																									△			
FTM-29 (Aegis Intercept Flight Test)																										△		
Israeli Cooperative Intercept Flight Test - FY 2018																									◆	◆	◆	◆
GTD-07b Part 1 (BMDS Ground Test)																										◆	◆	◆
FTM-33 (Aegis Intercept Flight Test)																											△	
FTM-32 (Aegis Intercept Flight Test)																											△	
GTD-07b Part 2 (BMDS Ground Test)																											◆	◆

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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

	FY 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-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																																△

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	1	2012	1	2012
FTP-05 (PATRIOT Intercept Flight Test)	1	2012	1	2012
European Phase Adaptive Approach (EPAA)-1 Capability Declaration	1	2012	1	2012
Arrow Flight Test - FY 2012	2	2012	2	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Fast Eagle Increment 1	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-16 E2a (Aegis Intercept Flight Test)	3	2012	3	2012
FTP-06 (PATRIOT Intercept Flight Test)	4	2012	4	2012
Fast Eagle Increment 1 (Follow On)	4	2012	4	2012
FTP-07 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012
GTD-04e EUCOM (BMDS Distributed Ground Test)	4	2012	1	2013
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GTD-04e CENTCOM (BMDS Distributed Ground Test)	1	2013	2	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (DT)	2	2013	3	2013
FTO-01 (Operational Test)	2	2013	3	2013
FTM-21 E1/E2/E3 (Aegis Flight Test)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
AST-14 (Arrow WS Intercept Flight Test)	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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) (OT)	3	2013	4	2013
GTD-04 NORTHCOM/PACOM (BMDS Distributed Ground Test) (OT)	3	2013	4	2013
Install Spiral 8.2 Mission Node - Ground Test	4	2013	1	2014
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Management Node - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Element and User Gateway Nodes (5) - C2BMC Testbed	4	2013	2	2014
SCDPTV-01 (Aegis Flight Test)	1	2014	1	2014
FTX-20 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
GTI-ISR-14 (BMDS Ground Test)	1	2014	4	2014
FTX-18 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
FTX-19 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
GM CTV-02 (GM Non Intercept Flight Test)	2	2014	2	2014
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
FTM-23 (Aegis Intercept Flight Test)	3	2014	3	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	4	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-01 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
AA FTM-02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
FTM-25 (Aegis Intercept Flight Test)	1	2015	1	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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-26 (Aegis Intercept Flight Test)	1	2015	1	2015
FTX-21 (Aegis SBT Simulated Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
SCDCTV-01 (Aegis Flight Test)	2	2015	2	2015
GTD-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTM-27 (Aegis Intercept Flight Test)	3	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
SCDCTV-02 (Aegis 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
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
GTI-07a (BMDS Ground Test)	2	2016	4	2016
SFTM-01 E1 (Aegis Simulated Intercept Flight Test)	3	2016	3	2016
SFTM-01 E2 (Aegis Intercept Flight Test)	3	2016	3	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
SFTM-02 (Aegis Intercept Flight Test)	1	2017	1	2017
FTX-24 (Aegis SBT Flight Test)	1	2017	1	2017
Spiral 8.2 Tri-Node Capability Declaration	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MT01: <i>C2BMC Test</i>
---	--	---

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
Spiral 8.2 EUCOM Capability Declaration	2	2017	2	2017
GTX-07b (BMDS Ground Test)	2	2017	4	2017
FTM-28 (Aegis Intercept Flight Test)	3	2017	3	2017
Spiral 8.2 CENTCOM Capability Declaration	3	2017	3	2017
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017
GTI-07b (BMDS Ground Test)	4	2017	2	2018
FTM-30 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-31 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-29 (Aegis Intercept Flight Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	2018
FTM-33 (Aegis Intercept Flight Test)	3	2018	3	2018
FTM-32 (Aegis Intercept Flight Test)	3	2018	3	2018
GTD-07b Part 2 (BMDS Ground Test)	3	2018	4	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development 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
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	-	58.525	94.394	96.257	-	96.257	100.261	102.242	103.085	96.970	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

OPERATIONS AND SUSTAINMENT

C2BMC Program Operations and Sustainment (O&S) consists of 1) sustaining C2BMC operational capability worldwide; 2) on-site sub-systems maintenance for all C2BMC including Combatant Commanders (COCOM) suites, Global Engagement Manager (GEM) suites, planners, remote Enterprise Work Stations (EWS), and GEM Work Stations (GWS), web browsers, and communication site(s) associated with the Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar(s); 3) the C2BMC Control Center that provides real-time resolution of operational issues; 4) vendor support which includes coordination and resolution of problems that occur with Commercial-off-the-Shelf (COTS) equipment; 5) training of operator, maintenance personnel, and testers (approximately 700 per year); 6) hardware and software maintenance and upgrade installation to ensure continuity of C2BMC operations.

On-site support provides:

- Assistance to the System Administrator of each Combatant Command
- Prime contractor support to operational users
- Maintenance of hardware and software
- Security support for the C2BMC equipment, hardware and software and auxiliary communication capabilities 24 hours a day, 7 days a week, 365 days a year through network and equipment operations monitoring
- Support to operators and testers during test, exercises, and wargames

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
---	--	---

Off-site support provides:

- Integrated logistics support planning and management
- Hardware and software maintenance and logistics functions that are beyond the capability of on-site support personnel
- Inventory and spares management
- Sustaining engineering support from the prime contractor and government activities
- Maintenance of software licenses and vendor support agreements
- Hardware and software maintenance agreements
- Vendor depot support services

C2BMC Control Center (CCC) (help desk) in Colorado Springs, CO provides:

- Real-time resolution of operational issues
- The schedule for maintenance, systems upgrades, tests, exercises, and wargames, coordinated across all users
- Collection of data regarding system/sub-system failures and prioritization of corrective actions
- Review of hardware/software problems and coordination of Commercial-Off-the-Shelf (COTS) developer/vendor service calls

Training support includes:

- Developing and maintaining operator, maintenance personnel, and testers training material for C2BMC components/capabilities
- Training tailored to each deployment and/or test
- Training curriculum/courses provided for BMD Planner, Situational Awareness, Global Engagement Manager (GEM), and the C2BMC Executive Course
- Warfighter sustainment training and skill proficiency
- Assistance to warfighter in development and execution of the Radar Management Course
- New equipment training to end-users and training organizations

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

	FY 2012	FY 2013	FY 2014
Title: Operations and Support	58.525	64.809	74.733
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
- Maintained C2BMC training suites			
- Sustained Global Engagement Manager (GEM) trainers			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Developed curriculum for and train operators, maintenance personnel, and testers - Resolved real-time operational issues through the C2BMC Control Center and BMDS Network Operation and Security Center (BNOSC) at FY 2010 level - Provided global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provided and supported communications circuits for fielded C2BMC locations - Provided integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provided operations support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Provided operations and sustainment personnel to support test and special operations for AN/TPY-2 at 5 deployed operational and test sites - Supported Host Nation operations, demonstrations, and tests - Provided sustainment training/skills proficiency to C2BMC operators - Upgraded and maintained computer network defense and network monitoring in the BNOSC - Provided sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Supported the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continued round-the-clock sustainment for Communications capabilities with AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continued on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continued C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continued sustaining engineering support and integrated logistics support for fielded hardware and software (previously in Program Element 0603884C, Project MD11) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center and Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC) at FY 2010 level - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provide support of AN/TPY-2 radar communications nodes - Provide operations and sustainment personnel to support test and special operations for Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) at 5 deployed operational test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operations - Upgrade and maintain computer network defense and network monitoring in the BNOSC - Operate the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provide support/sustainment for C2BMC installations - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with AN/TPY-2 (previously in Program Element 0603884C, Project MD11) - Continue on-site C2BMC support of fielded sites for hardware and software (previously in Program Element 0603884C, Project MD11) - Continue C2BMC operator training for fielded capabilities (previously in Program Element 0603884C, Project MD11) - Continue sustaining engineering support and integrated logistics support for fielded hardware and software (previously in Program Element 0603884C, Project MD11) <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Maintain C2BMC training suites - Sustain Global Engagement Manager (GEM) trainers - Develop curriculum for and train operators, maintenance personnel, and testers - Resolve real-time operational issues through the C2BMC Control Center (CCC) (includes Ballistic Missile Defense System (BMDS) Network Operation and Security Center (BNOSC)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provide and support communications circuits for fielded C2BMC locations - Provide integrated logistics support planning and management and sustaining engineering support for fielded hardware and software, including support to Navy Maritime Operations Centers where C2BMC equipment resides - Provide operations support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes 			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provide operations and sustainment personnel to support test and special operations for AN/TPY-2 at 6 deployed operational and test sites - Support Host Nation operations, demonstrations, and tests - Provide sustainment training/skills proficiency to C2BMC operators - Upgrade and maintain computer network defense and network monitoring in the CCC (including the BNOSC) - Operate the CCC (including the BNOSC) 24 hours a day, 7 days a week, 365 days a year - Provide sustainment of the BCN Teleport Gateway (BTG) at the DoD teleports: Lago Patria, IT; Ramstein, DE; Fort Buckner, JP; Camp Roberts, CA; Wahiawa, HI; Northwest, VA - Support the installation and integration of the second Modernization of Enterprise Terminal (MET) in EUCOM - Continue round-the-clock sustainment for Communications capabilities with Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) - Continue on-site C2BMC support of fielded sites for hardware and software - Continue C2BMC operator training for fielded capabilities - Continue sustaining engineering support and integrated logistics support for fielded hardware and software - Deploy second radar to Pacific Command (PACOM) <p>Increase due to requirements based on negotiated Prime contract value to maintain out of production hardware and software</p>			
<p>Title: Concurrent, Test, Training, and Operations (CTTO)</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: FY 2012 plans are captured in MX04, PE 0603888C - Ballistic Missile Defense Test and Targets \$32.389 million</p> <p>FY 2013 Plans: Operate and Sustain C2BMC Spiral 6.4 Tri-Node (Tri-Node includes PACOM, NORTHCOM, and STRATCOM) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS).</p> <ul style="list-style-type: none"> - Operate and Sustain C2BMC Spiral 6.4 EUCOM and CENTCOM Distributed Training System (DTS). - Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of CTTO. 	0.000 0	29.585 0	21.524 0

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Development of C2BMC Spiral 8.2 Training Systems.			
FY 2014 Plans:			
- Operate and Sustain C2BMC Spiral 6.4 Tri-Node (Tri-Node includes PACOM, NORTHCOM, and STRATCOM) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS).			
- Operate and Sustain C2BMC Spiral 6.4 EUCOM and CENTCOM Distributed Training System (DTS).			
- Deploy C2BMC Spiral 6.4 Training Support System (TSS) to Pacific Command (PACOM), Northern Command (NORTHCOM), European Command (EUCOM) and Central Command (CENTCOM).			
- Continue providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture.			
- Monitor and coordinate the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of CTTO.			
- Development of C2BMC Spiral 8.2 Training Systems.			
Decrease due to the leveling out of Spiral 8.2 training development and Spiral 6.4 Operations and Sustainment.			
Accomplishments/Planned Programs Subtotals	58.525	94.394	96.257

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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
---	--	---

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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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
• 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
• 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

D. Acquisition Strategy

The Command and Control, Battle Management and Communications (C2BMC) acquisition strategy is consistent with the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, incremental development, evolutionary acquisition, and knowledge-based funding. Lockheed Martin Mission Systems is the C2BMC prime contractor via an Other Transaction Agreement contract vehicle, which ended 1st quarter FY 2012. A sole source C2BMC follow-on contract to Lockheed Martin for Spiral Development, Operation and Sustainment, and Testing was awarded 1st quarter FY 2012 for an ordering period of 2nd quarter 2012 through 1st quarter 2017. Major team members to Lockheed are Northrop-Grumman, Boeing, Raytheon, and General Dynamics. They are charged with the development, testing, fielding, training, and operations and sustainment support of the C2BMC system. They perform development and testing of C2BMC products in Arlington, VA; Huntsville, AL; and Colorado Springs, CO; and provide worldwide on-site operations and maintenance support. A competitive award is planned for Spiral 8.4 to support Phased Adaptive Approach (PAA) 4. Additionally, the Defense Information Systems Agency (DISA) supports C2BMC worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center (FFRDC/UARC), and Contract Support Services (CSS) personnel are also fully integrated as part of the Prime contractor's team to function in an Integrated Product Team environment.

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</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			
Operations and Support - DOTMLPF	IA	SETAC:-	0.000	0.500		0.000		0.000		-		0.000	0.000	0.500	0.000
Operations and Support - Indirect Support	MIPR	DISA DECC/DISA TECC:Various	0.000	4.761		9.000	Oct 2012	7.650	Oct 2013	-		7.650	Continuing	Continuing	Continuing
Operations and Support - Teleport Sustainment	MIPR	SPAWAR:San Diego, CA	0.000	2.799		2.045	Oct 2012	0.000		-		0.000	0.000	4.844	0.000
Operations and Support - Unit Personnel, Control System Improvement Sustaining Support	SS/IDIQ	Lockheed Martin Team:Arlington, VA	0.000	34.803		53.764	Jan 2013	67.083	Dec 2013	-		67.083	Continuing	Continuing	Continuing
Operations and Support - Unit Personnel, Control System Improvement, Sustaining Support	SS/CPAF	Lockheed Martin Team:Arlington, VA	0.000	13.001		0.000		0.000		-		0.000	0.000	13.001	13.001
Operations and Support - Warfighter Training	IA	Lockheed Martin Team:Arlington, VA	0.000	2.661		0.000		0.000		-		0.000	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations	SS/CPAF	Northrop Grumman:Boeing	0.000	0.000		3.782	Nov 2012	0.000		-		0.000	0.000	3.782	3.782
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations/Training Enhancements	SS/IDIQ	Lockheed Martin Team Arlington,VA:Huntsville, AL, Colorado Springs, CO	0.000	0.000		25.803	Dec 2012	21.524	Dec 2013	-		21.524	Continuing	Continuing	Continuing
Subtotal			0.000	58.525		94.394		96.257		0.000		96.257			

Remarks

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development 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			
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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

	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	58.525	94.394	96.257	0.000		96.257	

Remarks
N/A

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</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>	-	12.549	18.602	22.151	-	22.151	21.081	23.318	26.039	25.054	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

In FY 2013 and FY 2014, Program Wide Support reflects proportional increases as a result of increases in Ballistic Missile Defense Command and Control, Battle Management & Communication.

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	12.549	18.602	22.151
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:			

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	PROJECT MD40: <i>Program-Wide Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	12.549	18.602	22.151

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 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</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	Allot	Various:Multi: AL, CA, CO, VA	0.000	1.749		0.457	Jun 2013	0.029	Jun 2014	-		0.029	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various:Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.000	0.000		0.015	Oct 2012	0.000		-		0.000	0.015	0.030	0.000
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AK, AL, CA, CO, HI, VA	0.000	0.000		2.290	Nov 2012	3.100	Nov 2013	-		3.100	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various:Multi: AK, AL, CA, CO, HI, VA	0.000	8.000		15.053	Oct 2012	17.973	Oct 2013	-		17.973	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various:Multi: AK, AL, CA, CO, VA	0.000	0.000		0.787	Nov 2012	1.049	Nov 2013	-		1.049	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services Travel	Allot	Various:Multi: AL, CA, CO, VA	0.000	2.800		0.000		0.000		-		0.000	2.800	5.600	0.000
Subtotal			0.000	12.549		18.602		22.151		0.000		22.151			

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	12.549	18.602	22.151	0.000	22.151			

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter 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
Total Program Element	118.546	36.684	55.550	47.419	-	47.419	47.793	53.182	54.037	54.608	Continuing	Continuing
MD03: <i>Joint Warfighter Support</i>	118.546	35.054	52.765	44.651	-	44.651	45.212	50.177	50.673	51.266	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	1.630	2.785	2.768	-	2.768	2.581	3.005	3.364	3.342	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

FY 2014 decrease reflects the transfer of funds for the Joint Ballistic Missile Defense Education and Training Activities from the Ballistic Missile Defense Joint Warfighter Program Element 0603898C to support the functional transfer as codified through a signed memorandum of agreement to the United States Strategic Command (USSTRATCOM).

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 Joint Warfighter Support Program (JWSP) is MDA's primary means for providing direct technical support to Combatant Commanders, the Military Services and the Joint Staff on Ballistic Missile Defense System (BMDS) developments. It enables delivery of BMDS capabilities to Warfighters and ensures their participation in the identification and development of new BMD capabilities via the Warfighter Involvement Process. The JWSP Program allows the Warfighter and Material Developer to work together to identify gaps, seams and needs in war fighting capability and develop enhancements to BMD System attributes through submission of Modification and Fielding Requests. The JWSP also provides for continuous, `round the clock` BMD system-related support to Warfighters deployed across the globe on a 24/7/365 basis. The program enables rapid delivery of responses to Warfighter Requests for Information and Requests for Analyses, which is especially critical to mission success in protecting US forces and other defended assets during ``Real World`` threat events. The program supports delivery of product improvements to Warfighters through technical reviews allows employment of technical analyses to support development of shot doctrine and enables the inclusion of both Combatant Commander (COCOM) and Material Developer BMD-related objectives in COCOM/Joint Staff sponsored wargames and exercises, which are used to sharpen and enhance joint BMD warfighting skills.

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).

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>
---	--

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	41.174	55.550	53.139	-	53.139
Current President's Budget	36.684	55.550	47.419	-	47.419
Total Adjustments	-4.490	0.000	-5.720	-	-5.720
• 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	-0.943	0.000			
• SBIR/STTR Transfer	-3.547	0.000			
• Other Adjustment	0.000	0.000	-5.720	-	-5.720

Change Summary Explanation

FY 2014 decrease reflects the transfer of funds for the Joint Ballistic Missile Defense Education and Training Activities from the Ballistic Missile Defense Joint Warfighter Program Element 0603898C to support the functional transfer as codified through a signed memorandum of agreement to the United States Strategic Command (USSTRATCOM).

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter 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
MD03: <i>Joint Warfighter Support</i>	118.546	35.054	52.765	44.651	-	44.651	45.212	50.177	50.673	51.266	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 Joint Warfighter Support budget project (MD03) is comprised of three primary responsibilities: Wargames and Exercises, Warfighter Operational Support, and Warfighter Strategic Integration.

Wargames and Exercises Functions:

- Support the Warfighter in planning and conducting worldwide Wargames and Exercises in support of the Ballistic Missile Defense System (BMDS) development and fielding.
- Enable the Warfighter to define, test, and deploy, and employ new missile defense capabilities.
- Support the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination.
- Examine current and future BMDS operational capabilities for geographical and strategic Combatant Commands.

Warfighter Operational Support Functions:

- Provide direct planning and integration support, including travel, for all Geographic Combatant Command Senior Leadership engagements by the MDA.
- Support requirements for exercises, wargames, planning and technology conferences.
- Support the Geographical Combatant Commands (GCCs) in Warfighter Involvement Process (WIP) activities to generate the Prioritized Capabilities List (PCL), Achievable Capabilities List (ACL) and the Modification and Fielding Request List (MFRL).
- Provide Huntsville MDA Operational Center (HMOC) Contingency Operational Support for MDA Executive Leadership.

The Warfighter Strategic Integration part of MD03 is comprised of four primary functions: (1) Geographic Combatant Commander Support; (2) Joint Staff, Military Service, Strategic Command (STRATCOM), Northern Command (NORTHCOM), and Joint Functional Component Command (JFCC) Integration; (3) Current Operations Support; (4) BMDS Training and Education.

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
<p>(1) Geographic Combatant Commander Support The Warfighter Strategic Integration Directorate is responsible for interfacing with Geographic Combatant Commands (GCCs) for BMDS capabilities delivered and for assessing MDA's ability to provide current and future capabilities to meet war fighting needs. -The Warfighter Strategic Integration Directorate coordinates with the GCCs for asset management processes and assisting in planning, capability delivery and fielding assets as required -The Ground Test Execution Directorate interfaces with the Combatant Commands at US Pacific Command (PACOM), US European Command (EUCOM), and US Central Command (CENTCOM) -Provides operational readiness reporting in accordance with United States Strategic Command (USSTRATCOM) Instructions on BMDS assets -Synchronize the execution of Warfighter Operational and Sustainment Requirements -Maintain BMDS Configuration Control through the positive control of test, development, and operational activities in accordance with USSTRATCOM Instruction 538-1 and approved configuration documentation -Provide Asset Management training and support in response to Warfighter requirements -Manage the MDA process for responding to Warfighting Requests for Analysis and Requests for Information (RFA/RFI)</p> <p>(2) Joint Staff, Services and Combatant Commander Integration The Developer-Warfighter Interface continues to be critically important for the effective and efficient fielding of the Ballistic Missile Defense System (BMDS) capabilities worldwide. To this end, the Warfighter Interface Integration Directorate maintains a Joint Staff, Service and Combatant Commander integration responsibility resulting in major functions, products, and tasks which focus on cross-Departmental initiative (such as the transition of BMDS Elements to the Services and emergency deployments of BMDS capabilities), and cross-Departmental Corporate Boards; Enable Joint Staff and Service collaboration on BMDS issues by providing strategic level interfaces from the MDA, to the Military Services, Combatant Commanders (COCOMs), the Joint Staff, and the Office of the Under Secretary of Defense for Policy (OSD (P)).</p> <p>(3) Current Operations Support The Warfighter Strategic Integration Directorate provides around the clock BMDS Operations Support to Missile Defense Agency (MDA), Warfighter stakeholders, Combatant Commander staffs, Functional Component Commands and military units. Current operations support includes but is not limited to: maintaining the MDA Operations Support Center at the Missile Defense Integration and Operations Center (MDIOC) at Schriever AFB, CO 24 hours a day, 7 days a week, 365 days a year and the MDA Mission Operations Center at MDA Headquarter 5 days per week, 16 hours per day; maintain the Integrated Scheduling Tool (IST) to include the planning and execution of scheduled maintenance, upgrades and testing using the Asset Management System; maintaining strict control of BMDS architecture configurations consistent with the Operations Capacity Baseline and Event Owner needs as properly scheduled; the measurement and accounting of BMDS Operational Availability, Equipment Readiness Rates and Warfighter Availability through the execution of BMDS Operational Readiness Reporting System (BORRS); reporting Commanders Critical Information Requirements as defined by MDA leadership; maintaining a current and accurate BMDS Handbook; and readiness to support Warfighter Exercises or Real World Contingencies on short notice; Manage the MDA process for responding to Warfighter Requests for Analysis and Requests for Information (RFA/RFI); Perform BMDS Strategic Planning in concert with Joint Functional Component Command Integrated Missile Defense (JFCC IMD); Provide Geographic Combatant Command (GCC) Asset Management Training and staff augmentation as required.</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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

(4) BMDS Training and Education
 This activity develops and maintains BMDS Training and Education at the system level that is not conducted by the Services. The training focuses on how the elements of the BMDS interact in the joint environment and what is needed to employ those individual elements effectively as an integrated BMDS. A key part of this activity includes developing and updating BMDS educational courses and conducting education and training of select BMDS stakeholders, staffs and organizations on emerging BMDS capabilities development. As new BMDS capabilities are transitioned to the field, upgrades and improvements will be incorporated to maintain the requisite level of training.

Joint Warfighter Support acts as the Agency coordination element to provide Executive secretarial support to Operational Forces Standing Committee as required and coordinate Agency internal coordination for the Warfighter Involvement Process (including Primary Capability List/Modification and Fielding Request List element workups).

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

	FY 2012	FY 2013	FY 2014
<p>Title: Warfighter Operational Support / Wargames and Exercises</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Provided support for Component Command participants to attend numerous missile defense exercises and wargames - Supported travel requirements of the Directorate for Warfighter Interface Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences - Provided Contractor Technical Services Support to the Directorate for Warfighter Interface - Enabled the Warfighter to define, test, deploy and employ new missile defense capabilities - Trained to maintain proficiency with current capabilities - Provided feedback and supported involvement in MDA's BMDS development process - Supported to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination - Developed Table Top evolutions to include future concepts (Early Intercept) and BMDS assets conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded - Provided 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process - Updated the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements - Conducted Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development 	<p>17.606</p> <p>0</p>	<p>32.141</p> <p>0</p>	<p>30.054</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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Conducted Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use - Conducted BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders - Managed MDA/COCOM interfaces - Provided support to the development and update of BMD portions of COCOM OPLANS and CONPLANS - Provided support to the BMDS Capability Delivery process and transition and transfer to the services - Supported USSTRATCOM with development of the annual BMDS Military Utility Assessment <p>FY 2013 Plans: Below is the following Wargame and Exercise Events for FY 2013:</p> <ul style="list-style-type: none"> - AIR MISSILE DEFENSE 12 CENTCOM Exercise 2 2Q FY 2013 - AIR MISSILE DEFENSE 12 CENTCOM Exercise 3 3Q FY 2013 - AIR MISSILE DEFENSE 12 CENTCOM Exercise 4 4Q FY 2013 - AIR MISSILE DEFENSE 12 EUCOM Exercise 1 1Q FY 2013 - AIR MISSILE DEFENSE 12 EUCOM Exercise 2 2Q FY 2013 - AIR MISSILE DEFENSE 12 EUCOM Exercise 3 3Q FY 2013 - AIR MISSILE DEFENSE 12 EUCOM Exercise 4 4Q FY 2013 - International Symposium on INTEGRATED AIR MISSILE DEFENSE SYMP 3Q FY 2013 - ASSURED RESPONSE Exercise Series 4Q FY 2013 - BMDS WARGAME Series Event 3Q FY 2013 - CONSOLIDATED PLANNING Exercise Event 4Q FY 2013 - CONSOLIDATED PLANNING Exercise Planning 2Q FY 2013 - EAGLE RESOLVE 12 Exercise Event 3Q FY 2013 - GLOBAL LIGHTNING 12 Exercise Event 3Q FY 2013 - GLOBAL LIGHTNING 12 Exercise Planning 2Q FY 2013 - GLOBAL THUNDER 13 Planning 3Q FY 2013 - JOINT AIR DEFENSE CENTCOM Exercise Event 1 & 2 1Q FY 2013 - JOINT AIR DEFENSE CENTCOM Exercise Event 3 & 4 2Q FY 2013 - JOINT AIR DEFENSE CENTCOM Exercise Event 5 & 6 3Q FY 2013 - JOINT AIR DEFENSE CENTCOM Exercise Event 7 & 8 4Q FY 2013 - JOINT AIR DEFENSE EUCOM Exercise Event 1 & 2 1Q FY 2013 - JOINT AIR DEFENSE EUCOM Exercise Event 3 & 4 2Q FY 2013 			
--	--	--	--

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - JOINT AIR DEFENSE EUCOM Exercise Event 5 & 6 3Q FY 2013 - JOINT AIR DEFENSE EUCOM Exercise Event 7 & 8 4Q FY 2013 - JOINT PROJECT OPTIC WINDMILL 2013 Planning 2Q FY 2013 - KEEN EDGE 12 Exercise Event 2Q FY 2013 - KEY RESOLVE 12 Exercise Event 2Q FY 2013 - KEY RESOLVE 13 Exercise Planning 3Q FY 2013 - MISSILE DEFENSE CONFERENCE 2Q FY 2013 - MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 4Q FY 2013 - NATIONAL MISSILE DEFENSE CONFERENCE WARGAME 2Q FY 2013 - NIMBLE TITAN 12 Wargame Event 3Q FY 2013 - TERMINAL FURY 12 Exercise Event 3Q FY 2013 - ULCHI FREEDOM GUARD 12 Event 3Q FY 2013 - ULCHI FREEDOM GUARD 12 Planning 1Q FY 2013 - VIGILANT SHIELD 11-2 Exercise Event 1Q FY 2013 - VIGILANT SHIELD 13 Exercise Planning 3Q FY 2013 -Provide support for Component Command participants to attend numerous missile defense exercises and wargames -Support travel requirements of the Directorate for Warfighter Interface Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Services Support to the Directorate for Warfighter Interface -Enables the Warfighter to define, test, deploy and employ new missile defense capabilities -Train to maintain proficiency with current capabilities -Provide feedback and support involvement in MDA's BMDS development process -Support to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Develop Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provide 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conduct Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>		PROJECT MD03: <i>Joint Warfighter Support</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Conduct Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conduct BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage MDA/COCOM interfaces -Provide support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provide support to the BMDS Capability Delivery process and transition and transfer to the services -Support USSTRATCOM with development of the annual BMDS Military Utility Assessment <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Continue efforts as listed under FY 2013 plans -Requirement decrease result of approved Wargames and Exercises changes 				
<p>Title: Warfighter Strategic Integration</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Manned and operated MDA's Operations Support Center (OSC) 24 hours per day, 7 days per week, 365 days per year to gather, develop, maintain, communicate and fuse all BMDS situational awareness data concerning the current Health and Status of the BMDS, maintained operational and exercise configuration control of the BMDS architecture, reported operational readiness, conducted pre-fielding and fielding asset coordination responsibilities, provided real time BMDS information to all BMDS stakeholders and provided crisis action planning and support during exercises and real world contingencies - Planned, organized, resourced and managed BMD operations support functions to optimize mission performance - Maintained approved BMDS operational configuration and enabled on-site developmental operations, sustainment, and operational activities in a Concurrent Test, Training and Operations (CTTO) environment - Precisely aligned BMDS components in accordance with the currently approved Operational or Test Configuration. This required participation in the Integration Synchronization Group and the MDA Program Change Board, and real time management to ensure the BMDS is in the specific approved Operational Configuration - Served as the MDA BMDS Asset Management office of primary responsibility for coordinating and providing integrated MDA development, maintenance and training inputs into the Asset Management Process. Planning and coordination included long range planning (MDA Annual Plan), quarterly schedules, BMDS Operating Schedule (2-8 weeks of near term schedules), and Weekly Activity Message coordination and execution 		<p>16.369</p> <p>Articles: 0</p>	<p>20.624</p> <p>0</p>	<p>14.597</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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Monitored, collected, and analyzed BMDS operational readiness data to communicate past and present BMDS operational readiness and improve future performance - Maintained BMDS Operational Baseline documentation and associated BMDS Operational Configuration documentation to include the BMDS Handbook and technical library - Maintained BMDS applicable configuration documents for elements and Wargames Support Center (WSC) - Ensured BMDS Watch Officer (BWO) and Warfighter had situational awareness of current and proposed BMDS Operational Baseline requirements - Implemented BMDS Operational Readiness Reporting System (BORRS) Data for COCOMs - Monitored BMDS Readiness (Operations Capability Protection Capability, Reliability, Availability, Maintainability, BMDS Operational Capability Assessment, Maintenance Data) - Manned and operated the OSPT in support of COCOM contingencies, Wargames and Exercises - Continued to enhance Operations Support Center capabilities based on BMDS future capabilities - Continued improvement of situational awareness, technical reach-back and connectivity to MDA development, testing, and fielding organizations - Assisted the Joint Functional Component Command for Integrated Missile Defense in planning and executing Warfighter Trial Periods - Continued streamlining BMDS scheduling asset management process to support the warfighter - Continued improvements in overseeing the BMDS operational configuration and increase fidelity and technical detail in configuration specifications - Continued to coordinate and align BMDS scheduled maintenance to maximize availability - Continued integration of Capability Demonstration-like objectives into the Ground Test Campaign - Continued to update the BMDS Handbook and create and publish the BMDS Handbook for future BMDS capabilities - Continued quarterly BMDS System Operability Checks - Continued to improve the BMDS Operational Readiness Reporting System (BORRS) - Improved Operations Support Center and Asset Management Continuity of Operations capabilities - Integrated configuration management tool capabilities into the on-line Asset Management tools - Integrated situational awareness tool capabilities into the on-line Asset management tools - Continued to improve the MDA-wide BMDS Operational Reporting process - Provided strategic-level interfaces between MDA and the Military Services, the Joint Staff, and the Office of the Under Secretary of Defense for Policy (OSD (P)), with a focus on cross-Departmental initiatives (such as the transition of BMDS Elements Components to the Services), and cross-Departmental Corporate Boards (such as the Missile Defense Executive Board) -Maintained daily, strategic-level interfaces with the Military Services and Joint Staff, providing them with the critical information they require to plan for the delivery, fielding, and operation of BMDS capabilities -Provided direct support to the Director’s Action Group for MDA senior leadership projects 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Supported MDA Senior Leadership participation in the MDEB, the Joint Requirements Oversight Council, the Joint Capability Boards and other interdepartmental venues -Liaison with OSD Policy on affairs related to missile defense -Directly interfaced with the Services, Joint Staff and Combatant Command on missile defense policy issues -Ensured senior leadership is prepared for all external engagements (executive boards, testimony, Combatant Command visits, public engagements, etc) as relates to operational BMDS strategic planning and policy -Enabled BMDS operational situational awareness and real-world crisis response to the leadership through the MDAHQ Mission Operations Center -Provided MDA`s planner level coordination for Combatant Command, Joint Staff, and inter-agency staff actions -Supported Component Command Tabletop Exercises and Experiments to facilitate the development of Regional Concepts of Operation and Operational Concepts development for Early Intercept concepts and other programs such as Nimble Fire 11 -Assisted Warfighters to update the annual BMDS Prioritized Capabilities List to reflect changes in Component Command priorities for needed BMDS enhancements -Assisted Strategic Command with its annual BMDS military Utility Assessment -Continued to work with the Program Offices and the Warfighter to establish Concepts of Operation for transitioning BMDS capabilities -Continued to prepare the MDA leadership to represent the Agency to the Missile Defense Executive Board on critical BMDS related topics decisions -Support Combatant Commanders in execution of real-world operations contingencies -Managed Warfighter Request for Analysis Request for Information (RFARFI) process within MDA -Operated the BMDS Training and Education Center -Provided BMDS-Level Training and Education for the Joint Warfighters, Defense Officials and Services -Provided Training Transition support to the Services -Trained by the BMDS Training & Education Center -Provided 130 courses (~2500 hours of instruction) to approximately 1600 students -Provided simulated missile injects over the live Satellite Theater Event System broadcast -Continued to operate the Joint BMDS Training and Education Center Campus -Continued to host Integrated Ballistic Missile Defense Training Working Groups -Developed Combatant Command training courses -Provided support for Component Command participants to attend numerous missile defense exercises and wargames -Supported travel requirements of the Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provided Contractor Technical Services Support to enable the Warfighter to define, test, deploy and employ new missile defense capabilities 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> -Trained to maintain proficiency with current capabilities -Provided feedback and support involvement in MDA`s BMDS development process -Supported the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Developed Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provided 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conducted Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development -Conducted Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conducted BMDS Table Top exercises with low fidelity demonstrations for our friends and allies, working with the MDA Deputy for International Programs and the Combatant Commanders -Worked with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Managed MDACOCOM interfaces -Provided support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provided support to the BMDS Capability Delivery process and transition and transfer to the services -Supported USSTRATCOM with development of the annual BMDS Military Utility Assessment -Defense Efficiency - Civilian Staffing Reduction. As part of the Department of Defense reform agenda, eliminates civilian full-time equivalent positions to maintain, with limited exceptions, civilian staffing at the FY 2010 level (FY 2012 baseline: \$-.773 million) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Man and operate MDA`s Operations Support Center (OSC) 24 hours per day, 7 days per week, 365 days per year to gather, develop, maintain, communicate and fuse all BMDS situational awareness data concerning the current Health and Status of the BMDS, maintaining operational and exercise configuration control of the BMDS architecture, reporting operational readiness, conducting pre-fielding and fielding asset coordination responsibilities, providing real time BMDS information to all BMDS stakeholders and providing crisis action planning and support during exercises and real world contingencies 			
---	--	--	--

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Man and operate the MDA HQ Mission Operations Center (MOC) at MDA HQ 5 days per week to provide situational awareness and understanding, and operational and developmental support to the MDA HQ element located in the NCR and serve as a fusion center for MDA Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response - Plan, organize, resource and manage BMD operations support functions to optimize mission performance - Maintain approved BMDS operational configuration and enable on-site developmental operations, sustainment, and operational activities in a Concurrent Test, Training and Operations (CTTO) environment - Precisely align BMDS components in accordance with the currently approved Operational or Test Configuration. This requires participation in the Integration Synchronization Group and the MDA Program Change Board, and real time management to ensure the BMDS is in the specific approved Operational Configuration - Serve as the MDA BMDS Asset Management office of primary responsibility for coordinating and providing integrated MDA development, maintenance and training inputs into the Asset Management Process. Planning and coordination includes long range planning (MDA Annual Plan), quarterly schedules, BMDS Operating Schedule (2-8 weeks of near term schedules), and Weekly Activity Message coordination and execution - Develop daily updates to the Combat Capabilities Assessment Schedule (CCAS) supporting 14th Air Force and the Combined Operating Schedules for EUCOM and CENTCOM - Monitor, collect, and analyze BMDS operational readiness data to communicate past and present BMDS operational readiness and improve future performance - Maintain BMDS Operational Baseline documentation and associated BMDS Operational Configuration documentation to include the BMDS Handbook and technical library - Maintain BMDS applicable configuration documents for elements and Wargames Support Center (WSC) - Ensure BMDS Watch Officer (BWO) and Warfighter have situational awareness of current and proposed BMDS Operational Baseline requirements - Implement BMDS Operational Readiness Reporting System (BORRS) Data for COCOMs - Monitor BMDS Readiness (Operations Capability Protection Capability, Reliability, Availability, Maintainability, BMDS Operational Capability Assessment, Maintenance Data) - Man and operate the Crisis Planning Team (CPT) in support of COCOM contingencies, Exercises - Continue to enhance Operations Support Center (OSC) capabilities based on BMDS future capabilities - Continue improvement of situational awareness, technical reach-back and connectivity to MDA development, testing, and fielding organizations - Assist the Joint Functional Component Command for Integrated Missile Defense in planning and executing Warfighter Trial Periods - Continue streamlining BMDS scheduling asset management process to support the warfighter 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Continue improvements in overseeing the BMDS operational configuration and increase fidelity and technical detail in configuration specifications - Continue to coordinate and align BMDS scheduled maintenance to maximize availability - Continue integration of Capability Demonstration-like objectives into the Ground Test Campaign - Continue to update the Handbook and create and publish the BMDS Handbook for future BMDS capabilities -Continue quarterly BMDS System Operability Checks -Continue to improve the BMDS Operational Readiness Reporting System (BORRS) -Improve Operations Support Center and Asset Management Continuity of Operations capabilities -Integrate configuration management tool capabilities into the on-line asset management tools -Integrate situational awareness tool capabilities into the on-line asset management tools -Continue to improve the MDA-wide BMDS Operational Reporting process -Continue to provide the BMDS Update Briefing to MDA Leadership at Headquarters Command Center -Continue to provide direct support to MDA Leadership at Headquarters Command Center -Continue to perform Battle Staff and Crisis Action Team operations for MDA Headquarters Command Center at Fort Belvoir, VA -Continue to provide BMDS operational situational awareness and real-world crisis response for MDA Headquarters Command Center at Fort Belvoir, VA -Continue to coordinate MDA Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response -Provide strategic-level interfaces between MDA and the Military Services, the Joint Staff (J39), and the Office of the Under Secretary of Defense for Policy (OSD (P)), with a focus on cross-Departmental initiatives (such as the transition of BMDS capabilities to the Services), as well as cross-COCOM forums Operations Forces Standing Committee (OSFC) Departmental Corporate Boards (such as the Missile Defense Executive Board) -Maintain daily, strategic-level interfaces with the Military Services and Joint Staff, providing them with the critical information they require to plan for the delivery, fielding, and operation of BMDS capabilities -Provide direct support to the Director’s Action Group for MDA senior leadership projects -Support MDA Senior Leadership participation in the OFSC, MDEB, the Joint Requirements Oversight Council, the Joint Capability Boards and other interdepartmental venues -Liaison with OSD Policy on affairs related to missile defense -Directly interface with the Services, Joint Staff and Combatant Command on missile defense policy issues -Ensure senior leadership is prepared for all external engagements (executive boards, testimony, Combatant Command visits, public engagements, etc) as relates to operational BMDS strategic planning and policy -Enable BMDS operational situational awareness and real-world crisis response to the leadership through the MDAHQ Mission Operations Center -Provide MDA’s planner level coordination for Combatant Command, Joint Staff, and inter-agency staff actions 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Support Component Command Tabletop Exercises and Experiments to facilitate the development of Regional Concepts of Operation and Operational Concepts development for Early Intercept concepts and other programs such as Nimble Fire 11 -Assist Warfighters to update the annual BMDS Prioritized Capabilities List to reflect changes in Component Command priorities for needed BMDS enhancements -Assist Strategic Command with its annual BMDS Military Utility Assessment -Continue to work with the Program Offices and the Warfighter to establish Concepts of Operation for transitioning BMDS capabilities -Continue to prepare the MDA leadership to represent the Agency to the OFSC Missile Defense Executive Board on critical BMDS related topics decisions -Support Combatant Commanders in execution of real-world operations contingencies -Manage Warfighter Request for Analysis Request for Information (RFARFI) process within MDA -Operate the BMDS Joint Training and Education Center -Provide BMDS-Level Training and Education for the Joint Warfighters, Defense Officials and Services -Provide Training Transition support to the Services -Training by the BMDS Training & Education Center -Develop Asset Management training courses -Develop Combatant Command training courses -Operate the Joint BMDS Training and Education Center -Provides BMDS-Level Training and Education for the MDA personnel, Joint Warfighters, Department of Defense Officials, Services and selected US Allies (over 2,000 students per year) -Provide focal point for US Government personnel from the COCOMs and components to obtain BMDS information, education, and training (over 170 training and education events per year) -Provide a BMDS 101 to foster greater understanding of missile defense among a general audience -Provide COCOM Staffs with familiarization of the BMDS including capabilities and limitations -Provide DOD and COCOM executive personnel with familiarization of the BMDS including capabilities and limitations. -Provide COCOM Staffs with planning and employment in-depth training in the global ballistic missile defense planning processes, day-to-day operations, and current future systems and issues -Provide missile defense space warning tool (MDST) support for exercises and training for Combatant Commands and Services (up to 247365) -Provides simulated missile injects over the operational IBS and Satellite Theater Event System broadcast by using a constructive simulation, which models the detection, tracking, and reporting of ballistic missile launches using space-based Infrared (IR) sensors -Provide support for Component Command participants to attend numerous missile defense exercises and wargames 			

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Support travel requirements to the Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences -Provide Contractor Technical Support Services as required to enable the Warfighter to define, test, deploy and employ new missile defense capabilities -Train to maintain proficiency with current capabilities -Provide feedback and support involvement in MDA`s BMDS development process -Support to the Joint Functional Component Commander for Integrated Missile Defense BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and to refine the European Capability Concept of Operations through low fidelity demonstration modeling simulations and MDA coordination -Develop Table Top evolutions to include future concepts (Early Intercept) and BMDS assets; conducting System Capability Reviews of new BMDS assets approaching the timeline to be fielded -Provide 24 hours a day, 7 days a week, 365 days a year MDA analysis support to Warfighter Exercises and to the Joint Staff, Services and Combatant Commands in order to document, validate, and prioritize new BMDS capabilities desired by the Warfighters, as well as enhancements to the characteristics of fielded capabilities through the Warfighter Involvement Process -Annual update of the BMDS Prioritized Capabilities List reflecting Combatant Command priorities for needed BMDS enhancements -Conduct Studies and Analyses, as required, to examine emergent Single Integrated Air Picture issues from a BMDS perspective and assess emerging technologies, studies, and theories for incorporation into future BMDS development -Conduct Studies and Analyses to support Joint Staff and Service BMDS Integration efforts required to ensure all aspects of the BMDS successfully transition from development to field use -Conduct BMDS Table Top exercises with low fidelity demonstrations for our friends and allies for International Programs and the Combatant Commanders -Work with the Terminal High-Altitude Area Defense, and other Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development -Manage MDACOCOM interfaces -Provide support to the development and update of BMD portions of COCOM OPLANS and CONPLANS -Provide support to the BMDS Capability Delivery process and transition and transfer to the services -Support USSTRATCOM with development of the annual BMDS Military Utility Assessment -Track the configuration and status of the BMDS through the execution of the BORRS and provide Life Cycle Sustainment Metrics in accordance with DOD and USDAT&L policies -Provide BMDS Operational Readiness Reporting System (BORRS) operational availability (OA) and Warfighter Availability (Aw) to the COCOMS, MDA, in support of Congressional Requests for Information 			

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
-Provide BORRS data to Operational Test Agency in support of their Military Utility Assessments				
FY 2014 Plans: -Continue efforts as listed under FY 2013 plans with the exception of the Joint BMDS Training and Education Center (JBTEC) activities which transferred to USSTRATCOM beginning FY 2014.				
Title: BMDS Materiel Readiness		1.079	0.000	0.000
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: - Performed life cycle Ballistic Missile Defense System (BMDS) readiness policy, planning, analysis and assessment in support of the Materiel (M) function of the Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities (DOTMLPF) - Executed Logistics Functional Manager duties, including training, mentoring and leading the logistics workforce - Executed personnel actions on behalf of the Logistics Functional Leads, to include updating the manpower database, recruited new hires, conducted personnel reviews and pay pools - Provided one full time MDA Engineering Support Services Integrator - Conducted Quarterly Readiness Integrated Product Team (IPT) meeting - Continued conduction of Item Unique Identification (IUID) IPT to monitor IUID IPT policy compliance - Executed overarching MOA governing Logistics Personnel - Implemented BMDS Readiness Directive and monitored compliance - Refined and implemented the Readiness Surge Team Support process - Developed, refined and implemented MDA Transportation Cell - Developed, refined and implemented MDA Property Management Office - Developed and conducted MDA Logistics Conference				
FY 2013 Plans: Starting FY 2013 BMDS Materiel Readiness transfers to various programs (Budget MD40) to better align agency level functions as a part of program wide support activities.				
FY 2014 Plans: N/A				
Accomplishments/Planned Programs Subtotals		35.054	52.765	44.651

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

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>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	7.940	6.912	6.515		6.515	6.522	7.128	7.289	7.378	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
• 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

Remarks

D. Acquisition Strategy

Missile Defense Agency will continue to enable effective delivery of Ballistic Missile Defense System capabilities to the Warfighter by ensuring their participation in the identification and development of new capabilities via the Warfighter Involvement Process.

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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			
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			
Warfighter Operational Support / Wargames and Exercises - BMDS Studies/Analysis	C/FFP	MDIOC/Northrop Grumman:Colorado Springs	0.000	1.598		0.000		0.000		-		0.000	0.000	1.598	0.000
Warfighter Operational Support / Wargames and Exercises - BMDS Support	MIPR	Multiple:Various	3.210	1.171		0.000		0.000		-		0.000	0.000	4.381	0.000
Warfighter Operational Support / Wargames and Exercises - BMDS Support A&AS	C/CPFF	MiDAESS:Colorado Springs	0.235	0.173		0.000		0.000		-		0.000	0.000	0.408	0.000
Warfighter Operational Support / Wargames and Exercises - Civilian Salaries/Operations Sustainment	Allot	MDA:Colorado Springs, Huntsville, NCR	3.769	1.862		1.989	Oct 2012	1.993		-		1.993	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Combatant Commanders (COCOM) Support	C/CPAF	JRDC/ MIPR:Colorado Springs, Huntsville, NCR	56.099	10.344		20.547	Oct 2012	16.018		-		16.018	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Combatant	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	3.950	1.223		1.212	Oct 2012	1.281		-		1.281	Continuing	Continuing	Continuing

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
Commanders (COCOM) Support A&S															
Warfighter Operational Support / Wargames and Exercises - Government Travel & Training	Allot	MDA:Colorado Springs, Huntsville, NCR	0.000	0.000		0.427	Oct 2012	0.795		-		0.795	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Support to MDA Leadership A&S	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	3.271	1.235		3.658	Nov 2012	3.755		-		3.755	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Wargame Support	C/CPAF	JRDC/ MIPR:Colorado Springs	0.000	0.000		4.308	Oct 2012	6.212		-		6.212	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Administrative HR	C/CPFF	MiDAESS:Colorado Springs NCR	0.000	0.359		0.650	Oct 2012	0.350	Oct 2013	-		0.350	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Armed Forces (Services) Support	C/CPFF	MiDAESS:Multiple	1.629	0.000		0.000		0.000		-		0.000	0.000	1.629	0.000
Warfighter Strategic Integration - Asset Management Server Maintenance	C/CPAF	JRDC:Colorado Springs, Huntsville	0.000	0.550		0.560	Nov 2012	0.465	Nov 2013	-		0.465	Continuing	Continuing	Continuing
Warfighter Strategic Integration - BMDS Support	C/FFP	MDIOC/Northrop Grumman:Colorado Springs	4.985	0.000		0.000		0.000		-		0.000	0.000	4.985	0.000
Warfighter Strategic Integration - BMDS Support A&S	C/CPFF	MiDAESS:Colorado Springs/Huntsville/ NCR	1.169	0.000		0.000		0.000		-		0.000	0.000	1.169	0.000
Warfighter Strategic Integration - BMDS Training and Education/ MDST	C/CPAF	JRDC:Colorado Springs	0.000	5.000		6.500	Nov 2012	1.282	Nov 2013	-		1.282	Continuing	Continuing	Continuing

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
Warfighter Strategic Integration - Civilian Salaries/Operations Sustainment	Allot	MDA:Colorado Springs/Huntsville, NCR	7.852	3.828		3.785	Oct 2012	4.525	Oct 2013	-		4.525	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Combatant Commanders (COCOM) A&AS	C/CPFF	MiDAESS:Colorado Springs/NCR/Huntsville	3.273	0.000		0.000		0.000		-		0.000	0.000	3.273	0.000
Warfighter Strategic Integration - Commanders (COCOM) Support	C/CPAF	MDIOC/Northrop Grumman:Colorado Springs	15.984	0.000		0.000		0.000		-		0.000	0.000	15.984	0.000
Warfighter Strategic Integration - Current Operations	C/CPAF	JRDC:Colorado Springs, NCR	0.000	2.121		3.274	Nov 2012	3.200	Nov 2013	-		3.200	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Current Operations A&AS	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	0.000	1.800		2.200	Oct 2012	1.910	Oct 2013	-		1.910	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Joint Staff and Service Interface	C/CPAF	MDA:Colorado Springs, Colorado	0.000	0.000		0.500	Oct 2012	0.000		-		0.000	0.000	0.500	0.000
Warfighter Strategic Integration - Joint Staff and Service Interface A&AS	C/CPFF	MiDAESS:Colorado Springs, Huntsville, NCR	0.000	1.800		2.200	Oct 2012	1.910	Oct 2013	-		1.910	Continuing	Continuing	Continuing
Warfighter Strategic Integration - Support to MDA Leadership	MIPR	Multiple:NCR/Colorado Springs	4.594	0.000		0.000		0.000		-		0.000	0.000	4.594	0.000
Warfighter Strategic Integration - Support to MDA Leadership A&AS	C/CPFF	MiDAESS:Colorado Springs/Huntsville/NCR/AK/CA	8.165	0.000		0.000		0.000		-		0.000	0.000	8.165	0.000
Warfighter Strategic Integration - Training and Education to the Warfighter	C/CPFF	MiDAESS:Colorado Springs	0.000	0.700		0.700	Oct 2012	0.700	Oct 2013	-		0.700	Continuing	Continuing	Continuing

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter 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			
Warfighter Strategic Integration - Travel and Training	Allot	MDA:Colorado Springs, Huntsville	0.000	0.211		0.255	Oct 2012	0.255	Oct 2013	-		0.255	Continuing	Continuing	Continuing
BMDS Materiel Readiness - Civilian Pay	Allot	MDA:Colorado Springs, Huntsville, NCR	0.000	1.048		0.000		0.000		-		0.000	0.000	1.048	0.000
BMDS Materiel Readiness - Travel and Training	Allot	MDA:Colorado Springs, Huntsville, NCR	0.361	0.031		0.000		0.000		-		0.000	0.000	0.392	0.000
Subtotal			118.546	35.054		52.765		44.651		0.000		44.651			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>			PROJECT MD03: <i>Joint Warfighter Support</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	118.546	35.054	52.765	44.651	0.000	44.651				

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2012	▲																											
KEEN EDGE 12 Exercise Event - 2012	▲																											
VIGILANT SHIELD 12 Exercise Event - 2012	▲																											
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2012	▲																											
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012		▲																										
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2012		▲																										
AIR MISSILE DEFENSE 12 EUCOM Exercise 1 - 2012			▲																									
TERMINAL FURY 12 Exercise Event - 2012			▲																									
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2012			▲																									
AIR MISSILE DEFENSE 12 CENTCOM Exercise 1 - 2012			▲																									
NIMBLE TITAN 12 Wargame Event - 2012			▲																									
GLOBAL LIGHTNING 12 Exercise Event - 2012			▲																									
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2012			▲																									
CONSOLIDATED PLANNING Exercise Event - 2012				▲																								
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2012				▲																								
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2012				▲																								
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2012				▲																								
JOINT AIR DEFENSE Exercise Event 1 - 2013					△																							
AIR MISSILE DEFENSE 13 CENTCOM Exercise 1 - 2013					△																							
GLOBAL THUNDER 13 Event - 2013					△																							
VIGILANT SHIELD 13 Exercise Event - 2013					△																							
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2013					△																							

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
CONGRESSIONAL WARGAME - 2013																												
MISSILE DEFENSE CONFERENCE-2Q 2013						△																						
BMDS WARGAME Event						△																						
JOINT PROJECT OPTIC WINDMILL 2013						△																						
TALISMAN SABRE Event - 2013						△																						
AIR MISSILE DEFENSE 13 EUCOM Exercise 1 - 2013						△																						
GLOBAL LIGHTNING 13 Exercise Planning - 2013						△																						
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013						△																						
KEEN EDGE 13 Exercise Planning - 2013						△																						
JOINT AIR DEFENSE Exercise Event 2 & 3 - 2013						△																						
KEY RESOLVE 13 Exercise Event 2013						△																						
GLOBAL LIGHTNING 13 Exercise Event - 2013							△																					
International Symposium on INTEGRATED AIR MISSILE DEFENSE SYMP - 2013							△																					
JOINT AIR DEFENSE Exercise Event 4 & 5 - 2013							△																					
ULCHI FREEDOM GUARD 13 Event - 2013							△																					
VIGILANT SHIELD 14 Exercise Planning - 2013							△																					
KEY RESOLVE 14 Exercise Planning - 2013							△																					
TERMINAL FURY 13 Exercise Event - 2013							△																					
EAGLE RESOLVE 13 Exercise Event - 2013							△																					
GLOBAL DEFENDER Exercise							△																					
GLOBAL THUNDER 14 Exercise Planning - 2013							△																					
NIMBLE TITAN 13 Wargame Event - 2013							△																					
AIR MISSILE DEFENSE 13 CENTCOM Exercise 3 - 2013							△																					
AIR MISSILE DEFENSE 13 EUCOM Exercise 2 - 2013								△																				
JOINT AIR DEFENSE Exercise Event 6 & 7 - 2013								△																				
AIR MISSILE DEFENSE 13 CENTCOM Exercise 4 - 2013								△																				
CONSOLIDATED PLANNING Exercise Event - 2013								△																				

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013								△																				
AIR MISSILE DEFENSE 14 EUCOM Exercise 1 - 2014									△																			
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014									△																			
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2014									△																			
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2014									△																			
ULCHI FREEDOM GUARD 14 Planning - 2013									△																			
AIR MISSILE DEFENSE 14 CENTCOM Exercise 1 - 2014									△																			
TERMINAL FURY 14 Exercise Planning - 2014									△																			
GLOBAL THUNDER 14 Exercise Event - 2014									△																			
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2014									△																			
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2014										△																		
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2014											△																	
MISSILE DEFENSE CONFERENCE-2Q 2014											△																	
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014											△																	
KEEN EDGE 14 Exercise Event - 2014											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014											△																	
CONGRESSIONAL WARGAME - 2014											△																	
AIR MISSILE DEFENSE 14 CENTCOM Exercise 2 - 2014											△																	
AIR MISSILE DEFENSE 14 EUCOM Exercise 2 - 2014											△																	
BMDS WARGAME 2014 Event - 2014												△																

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2014											△																	
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2014											△																	
TERMINAL FURY 14 Exercise Event - 2014											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2014											△																	
AIR MISSILE DEFENSE 14 EUCOM Exercise 3 - 2014											△																	
GLOBAL LIGHTNING 14 Exercise Event - 2014											△																	
ULCHI FREEDOM GUARD 14 Event - 2014											△																	
VIGILANT SHIELD 15 Exercise Planning - 2014											△																	
GDEx 06 Part 1											△																	
NIMBLE TITAN 14 Wargame Event - 2014											△																	
AIR MISSILE DEFENSE 14 CENTCOM Exercise 3 - 2014											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014											△																	
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2014												△																
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014												△																
AIR MISSILE DEFENSE 14 CENTCOM Exercise 4 - 2014												△																
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2014												△																
CONSOLIDATED PLANNING Exercise Event - 2014												△																
VIGILANT SHIELD 14 Exercise Event - 2015													△															
AIR MISSILE DEFENSE 15 EUCOM Exercise 1 - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2015													△															
AIR MISSILE DEFENSE 15 CENTCOM Exercise 1 - 2015													△															
GLOBAL THUNDER 14 Exercise Event - 2015													△															

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
VIGILANT SHIELD 15 Exercise Event - 2015																												
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2015													△															
MISSILE DEFENSE CONFERENCE-2Q 2015													△															
TALISMAN SABRE Event - 2015													△															
AIR MISSILE DEFENSE 15 EUCOM Exercise 2 - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2015													△															
KEEN EDGE 16 Exercise Event - 2015													△															
AIR MISSILE DEFENSE 15 CENCOM Exercise 2 - 2015													△															
CONGRESSIONAL WARGAME - 2015													△															
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015													△															
GLOBAL LIGHTNING 15 Exercise Event - 2015													△															
AIR MISSILE DEFENSE 15 CENTCOM Exercise 3 - 2015													△															
GDEx 06 Part 2													△															
TERMINAL FURY 15 Exercise Event - 2015													△															
ULCHI FREEDOM GUARD 15 Event - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2015													△															
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2015													△															
EAGLE RESOLVE 15 Exercise Event - 2015													△															
AIR MISSILE DEFENSE 15 EUCOM Exercise 3 - 2015													△															
AIR MISSILE DEFENSE 15 CENTCOM Exercise 4 - 2015													△															
JOINT PROJECT OPTIC WINDMILL 2015 Event - 2015													△															

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2015																												
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015																												
ASSURED RESPONSE Exercise Series - 2015																												
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2015																												
AIR MISSILE DEFENSE 16 EUCOM Exercise 1 - 2016																												
GLOBAL THUNDER 16 Exercise Event - 2016																												
VIGILANT SHIELD 16 Exercise Event - 2016																												
AIR MISSILE DEFENSE 16 CENTCOM Exercise 1 - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2016																												
AIR MISSILE DEFENSE 16 EUCOM Exercise 2 - 2016																												
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2016																												
KEEN EDGE 16 Exercise Event - 2016																												
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2016																												
AIR MISSILE DEFENSE 16 CENTCOM Exercise 2 - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2016																												
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016																												
JOINT PROJECT OPTIC WINDMILL 2017 Planning - 2016																												
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2016																												

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2016																			△									
ULCHI FREEDOM GUARD 16 Event - 2016																			△									
TERMINAL FURY 16 Exercise Event - 2016																			△									
BMDS WARGAME 2016 Event - 2016																			△									
NIMBLE TITAN 16 Wargame Event - 2016																			△									
GDEx 07a																			△									
GLOBAL LIGHTNING 16 Exercise Event - 2016																			△									
AIR MISSILE DEFENSE 16 CENTCOM Exercise 3 - 2016																			△									
AIR MISSILE DEFENSE 16 CENTCOM Exercise 4 - 2016																				△								
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2016																				△								
CONSOLIDATED PLANNING Exercise Event - 2016																				△								
ASSURED RESPONSE Exercise Series - 2016																				△								
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2016																				△								
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2017																					△							
VIGILANT SHIELD 17 Exercise Event - 2017																					△							
AIR MISSILE DEFENSE 17 CENTCOM Exercise 1 - 2017																					△							
AIR MISSILE DEFENSE 17 EUCOM Exercise 1 - 2017																					△							
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2017																					△							
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2017																					△							
GLOBAL THUNDER 17 Exercise Event - 2017																					△							
MISSILE DEFENSE CONFERENCE-2Q 2017																						△						
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2017																						△						

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</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	
KEEN EDGE 17 Exercise Event - 2017																													
TALISMAN SABRE Event - 2017																													
AIR MISSILE DEFENSE 17 EUCOM Exercise 2 - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2017																													
AIR MISSILE DEFENSE 17 CENCOM Exercise 2 - 2017																													
CONGRESSIONAL WARGAME - 2017																													
TERMINAL FURY 17 Exercise Event - 2017																													
ULCHI FREEDOM GUARD 17 Event - 2017																													
GLOBAL LIGHTNING 17 Exercise Event - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2017																													
AIR MISSILE DEFENSE 15 CENTCOM Exercise 3 - 2017																													
GDEx 07b Part 1																													
EAGLE RESOLVE 17 Exercise Event - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2017																													
AIR MISSILE DEFENSE 17 CENTCOM Exercise 4 - 2017																													
CONSOLIDATED PLANNING Exercise Event - 2017																													
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2017																													
JOINT PROJECT OPTIC WINDMILL 2017 Event - 2017																													
GLOBAL RESPONSE Exercise Series - 2017																													
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2017																													

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2012	1	2012	1	2012
KEEN EDGE 12 Exercise Event - 2012	1	2012	1	2012
VIGILANT SHIELD 12 Exercise Event - 2012	1	2012	1	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2012	1	2012	1	2012
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2012	2	2012	2	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2012	2	2012	2	2012
AIR MISSILE DEFENSE 12 EUCOM Exercise 1 - 2012	3	2012	3	2012
TERMINAL FURY 12 Exercise Event - 2012	3	2012	3	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2012	3	2012	3	2012
AIR MISSILE DEFENSE 12 CENTCOM Exercise 1 - 2012	3	2012	3	2012
NIMBLE TITAN 12 Wargame Event - 2012	3	2012	3	2012
GLOBAL LIGHTNING 12 Exercise Event - 2012	3	2012	3	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2012	3	2012	3	2012
CONSOLIDATED PLANNING Exercise Event - 2012	4	2012	4	2012
JOINT AIR DEFENSE EUCOM Exercise Event 7 - 2012	4	2012	4	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2012	4	2012	4	2012
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2012	4	2012	4	2012
JOINT AIR DEFENSE Exercise Event 1 - 2013	1	2013	1	2013
AIR MISSILE DEFENSE 13 CENTCOM Exercise 1 - 2013	1	2013	1	2013
GLOBAL THUNDER 13 Event - 2013	1	2013	1	2013
VIGILANT SHIELD 13 Exercise Event - 2013	1	2013	1	2013
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2013	1	2013	1	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
CONGRESSIONAL WARGAME - 2013	2	2013	2	2013
MISSILE DEFENSE CONFERENCE-2Q 2013	2	2013	2	2013
BMDS WARGAME Event	2	2013	2	2013
JOINT PROJECT OPTIC WINDMILL 2013	2	2013	2	2013
TALISMAN SABRE Event - 2013	2	2013	2	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 1 - 2013	2	2013	2	2013
GLOBAL LIGHTNING 13 Exercise Planning - 2013	2	2013	2	2013
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013	2	2013	2	2013
KEEN EDGE 13 Exercise Planning - 2013	2	2013	2	2013
JOINT AIR DEFENSE Exercise Event 2 & 3 - 2013	2	2013	2	2013
KEY RESOLVE 13 Exercise Event 2013	2	2013	2	2013
GLOBAL LIGHTNING 13 Exercise Event - 2013	3	2013	3	2013
International Symposium on INTEGRATED AIR MISSILE DEFENSE SYMP - 2013	3	2013	3	2013
JOINT AIR DEFENSE Exercise Event 4 & 5 - 2013	3	2013	3	2013
ULCHI FREEDOM GUARD 13 Event - 2013	3	2013	3	2013
VIGILANT SHIELD 14 Exercise Planning - 2013	3	2013	3	2013
KEY RESOLVE 14 Exercise Planning - 2013	3	2013	3	2013
TERMINAL FURY 13 Exercise Event - 2013	3	2013	3	2013
EAGLE RESOLVE 13 Exercise Event - 2013	3	2013	3	2013
GLOBAL DEFENDER Exercise	3	2013	3	2013
GLOBAL THUNDER 14 Exercise Planning - 2013	3	2013	3	2013
NIMBLE TITAN 13 Wargame Event - 2013	3	2013	3	2013
AIR MISSILE DEFENSE 13 CENTCOM Exercise 3 - 2013	3	2013	3	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 2 - 2013	4	2013	4	2013
JOINT AIR DEFENSE Exercise Event 6 & 7 - 2013	4	2013	4	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
AIR MISSILE DEFENSE 13 CENTCOM Exercise 4 - 2013	4	2013	4	2013
CONSOLIDATED PLANNING Exercise Event - 2013	4	2013	4	2013
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2013	4	2013	4	2013
AIR MISSILE DEFENSE 14 EUCOM Exercise 1 - 2014	1	2014	1	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014	1	2014	1	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2014	1	2014	1	2014
JOINT AIR DEFENSE EUCOM Exercise Event 2 - 2014	1	2014	1	2014
ULCHI FREEDOM GUARD 14 Planning - 2013	1	2014	1	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 1 - 2014	1	2014	1	2014
TERMINAL FURY 14 Exercise Planning - 2014	1	2014	1	2014
GLOBAL THUNDER 14 Exercise Event - 2014	1	2014	1	2014
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2014	1	2014	1	2014
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2014	2	2014	2	2014
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2014	2	2014	2	2014
MISSILE DEFENSE CONFERENCE-2Q 2014	2	2014	2	2014
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014	2	2014	2	2014
KEEN EDGE 14 Exercise Event - 2014	2	2014	2	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014	2	2014	2	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014	2	2014	2	2014
CONGRESSIONAL WARGAME - 2014	2	2014	2	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 2 - 2014	2	2014	2	2014
AIR MISSILE DEFENSE 14 EUCOM Exercise 2 - 2014	2	2014	2	2014
BMDS WARGAME 2014 Event - 2014	3	2014	3	2014
JOINT AIR DEFENSE EUCOM Exercise Event 6 - 2014	3	2014	3	2014
JOINT AIR DEFENSE EUCOM Exercise Event 5 - 2014	3	2014	3	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
TERMINAL FURY 14 Exercise Event - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2014	3	2014	3	2014
AIR MISSILE DEFENSE 14 EUCOM Exercise 3 - 2014	3	2014	3	2014
GLOBAL LIGHTNING 14 Exercise Event - 2014	3	2014	3	2014
ULCHI FREEDOM GUARD 14 Event - 2014	3	2014	3	2014
VIGILANT SHIELD 15 Exercise Planning - 2014	3	2014	3	2014
GDEx 06 Part 1	3	2014	3	2014
NIMBLE TITAN 14 Wargame Event - 2014	3	2014	3	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 3 - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2014	4	2014	4	2014
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2014	4	2014	4	2014
AIR MISSILE DEFENSE 14 CENTCOM Exercise 4 - 2014	4	2014	4	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2014	4	2014	4	2014
CONSOLIDATED PLANNING Exercise Event - 2014	4	2014	4	2014
VIGILANT SHIELD 14 Exercise Event - 2015	1	2015	1	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 1 - 2015	1	2015	1	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2015	1	2015	1	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 1 - 2015	1	2015	1	2015
GLOBAL THUNDER 14 Exercise Event - 2015	1	2015	1	2015
VIGILANT SHIELD 15 Exercise Event - 2015	1	2015	1	2015
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2015	1	2015	1	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2015	1	2015	1	2015
MISSILE DEFENSE CONFERENCE-2Q 2015	2	2015	2	2015
TALISMAN SABRE Event - 2015	2	2015	2	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
AIR MISSILE DEFENSE 15 EUCOM Exercise 2 - 2015	2	2015	2	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2015	2	2015	2	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2015	2	2015	2	2015
KEEN EDGE 16 Exercise Event - 2015	2	2015	2	2015
AIR MISSILE DEFENSE 15 CENCOM Exercise 2 - 2015	2	2015	2	2015
CONGRESSIONAL WARGAME - 2015	2	2015	2	2015
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015	2	2015	2	2015
GLOBAL LIGHTNING 15 Exercise Event - 2015	3	2015	3	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 3 - 2015	3	2015	3	2015
GDEx 06 Part 2	3	2015	3	2015
TERMINAL FURY 15 Exercise Event - 2015	3	2015	3	2015
ULCHI FREEDOM GUARD 15 Event - 2015	3	2015	3	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2015	3	2015	3	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2015	3	2015	3	2015
EAGLE RESOLVE 15 Exercise Event - 2015	3	2015	3	2015
AIR MISSILE DEFENSE 15 EUCOM Exercise 3 - 2015	3	2015	3	2015
AIR MISSILE DEFENSE 15 CENTCOM Exercise 4 - 2015	4	2015	4	2015
JOINT PROJECT OPTIC WINDMILL 2015 Event - 2015	4	2015	4	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2015	4	2015	4	2015
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2015	4	2015	4	2015
ASSURED RESPONSE Exercise Series - 2015	4	2015	4	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2015	4	2015	4	2015
AIR MISSILE DEFENSE 16 EUCOM Exercise 1 - 2016	1	2016	1	2016
GLOBAL THUNDER 16 Exercise Event - 2016	1	2016	1	2016
VIGILANT SHIELD 16 Exercise Event - 2016	1	2016	1	2016

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
AIR MISSILE DEFENSE 16 CENTCOM Exercise 1 - 2016	1	2016	1	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2016	1	2016	1	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2016	1	2016	1	2016
AIR MISSILE DEFENSE 16 EUCOM Exercise 2 - 2016	2	2016	2	2016
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2016	2	2016	2	2016
KEEN EDGE 16 Exercise Event - 2016	2	2016	2	2016
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2016	2	2016	2	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 2 - 2016	2	2016	2	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2016	2	2016	2	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2016	2	2016	2	2016
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016	2	2016	2	2016
JOINT PROJECT OPTIC WINDMILL 2017 Planning - 2016	2	2016	2	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2016	3	2016	3	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2016	3	2016	3	2016
ULCHI FREEDOM GUARD 16 Event - 2016	3	2016	3	2016
TERMINAL FURY 16 Exercise Event - 2016	3	2016	3	2016
BMDs WARGAME 2016 Event - 2016	3	2016	3	2016
NIMBLE TITAN 16 Wargame Event - 2016	3	2016	3	2016
GDEx 07a	3	2016	3	2016
GLOBAL LIGHTNING 16 Exercise Event - 2016	3	2016	3	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 3 - 2016	3	2016	3	2016
AIR MISSILE DEFENSE 16 CENTCOM Exercise 4 - 2016	4	2016	4	2016
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2016	4	2016	4	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2016	4	2016	4	2016
CONSOLIDATED PLANNING Exercise Event - 2016	4	2016	4	2016

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
ASSURED RESPONSE Exercise Series - 2016	4	2016	4	2016
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2016	4	2016	4	2016
JOINT AIR DEFENSE EUCOM Exercise Event 1 - 2017	1	2017	1	2017
VIGILANT SHIELD 17 Exercise Event - 2017	1	2017	1	2017
AIR MISSILE DEFENSE 17 CENTCOM Exercise 1 - 2017	1	2017	1	2017
AIR MISSILE DEFENSE 17 EUCOM Exercise 1 - 2017	1	2017	1	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2017	1	2017	1	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2017	1	2017	1	2017
GLOBAL THUNDER 17 Exercise Event - 2017	1	2017	1	2017
MISSILE DEFENSE CONFERENCE-2Q 2017	2	2017	2	2017
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2017	2	2017	2	2017
KEEN EDGE 17 Exercise Event - 2017	2	2017	2	2017
TALISMAN SABRE Event - 2017	2	2017	2	2017
AIR MISSILE DEFENSE 17 EUCOM Exercise 2 - 2017	2	2017	2	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2017	2	2017	2	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2017	2	2017	2	2017
AIR MISSILE DEFENSE 17 CENCOM Exercise 2 - 2017	2	2017	2	2017
CONGRESSIONAL WARGAME - 2017	2	2017	2	2017
TERMINAL FURY 17 Exercise Event - 2017	3	2017	3	2017
ULCHI FREEDOM GUARD 17 Event - 2017	3	2017	3	2017
GLOBAL LIGHTNING 17 Exercise Event - 2017	3	2017	3	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2017	3	2017	3	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2017	3	2017	3	2017
AIR MISSILE DEFENSE 15 CENTCOM Exercise 3 - 2017	3	2017	3	2017
GDEx 07b Part 1	3	2017	3	2017

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
EAGLE RESOLVE 17 Exercise Event - 2017	3	2017	3	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2017	4	2017	4	2017
AIR MISSILE DEFENSE 17 CENTCOM Exercise 4 - 2017	4	2017	4	2017
CONSOLIDATED PLANNING Exercise Event - 2017	4	2017	4	2017
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2017	4	2017	4	2017
JOINT PROJECT OPTIC WINDMILL 2017 Event - 2017	4	2017	4	2017
GLOBAL RESPONSE Exercise Series - 2017	4	2017	4	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2017	4	2017	4	2017
JOINT AIR DEFENSE CENTCOM Exercise Event 1 - 2018	1	2018	1	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2018	1	2018	1	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 8 - 2018	1	2018	1	2018
AIR MISSILE DEFENSE 18 EUCOM Exercise 1 - 2018	1	2018	1	2018
AIR MISSILE DEFENSE 18 CENTCOM Exercise 1 - 2018	1	2018	1	2018
VIGILANT SHIELD 18 Exercise Event - 2018	1	2018	1	2018
GLOBAL THUNDER 18 Exercise Event - 2018	1	2018	1	2018
NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2018	2	2018	2	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2018	2	2018	2	2018
AIR MISSILE DEFENSE 18 CENTCOM Exercise 2 - 2018	2	2018	2	2018
KEEN EDGE 18 Exercise Event - 2018	2	2018	2	2018
JOINT AIR DEFENSE EUCOM Exercise Event 3 - 2018	2	2018	2	2018
JOINT AIR DEFENSE EUCOM Exercise Event 4 - 2018	2	2018	2	2018
AIR MISSILE DEFENSE 18 EUCOM Exercise 2 - 2018	2	2018	2	2018
AIR MISSILE DEFENSE 18 CENTCOM Exercise 3 - 2018	3	2018	3	2018
NIMBLE TITAN 18 Wargame Event - 2018	3	2018	3	2018
GLOBAL LIGHTNING 18 Exercise Event - 2018	3	2018	3	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</i>	PROJECT MD03: <i>Joint Warfighter Support</i>
---	--	---

Events	Start		End	
	Quarter	Year	Quarter	Year
GDEx 07b Part 2	3	2018	3	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2018	3	2018	3	2018
BMDS WARGAME 2018 Event - 2018	3	2018	3	2018
TERMINAL FURY 18 Exercise Event - 2018	3	2018	3	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 6 - 2018	3	2018	3	2018
ULCHI FREEDOM GUARD 18 Event - 2018	3	2018	3	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2018	3	2018	3	2018
JOINT AIR DEFENSE CENTCOM Exercise Event 7 - 2018	4	2018	4	2018
AIR MISSILE DEFENSE 18 CENTCOM Exercise 4 - 2018	4	2018	4	2018
GLOBAL RESPONSE Exercise Series - 2018	4	2018	4	2018
MULTI-NATIONAL MISSILE DEFENSE CONFERENCE WARGAME - 2018	4	2018	4	2018
Consolidated Planning Exercise Event - 2018	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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</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>	-	1.630	2.785	2.768	-	2.768	2.581	3.005	3.364	3.342	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	1.630	2.785	2.768
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	1.630	2.785	2.768

UNCLASSIFIED

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 0603898C: <i>Ballistic Missile Defense</i> <i>Joint Warfighter Support</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

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 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</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 and Support Services	C/CPFF	ALATEC , INC,:AL, CO, VA	0.000	1.630		2.785	Oct 2012	2.768	Oct 2013	-		2.768	Continuing	Continuing	Continuing
Subtotal			0.000	1.630		2.785		2.768		0.000		2.768			

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	1.630	2.785	2.768	0.000	2.768			

Remarks
N/A

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</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	114.363	58.970	63.043	52.131	-	52.131	59.893	52.005	61.751	53.511	Continuing	Continuing
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	114.363	56.129	59.842	48.858	-	48.858	56.443	48.849	57.796	49.903	Continuing	Continuing
MC22: <i>Cyber Operations</i>	-	0.000	0.000	0.535	-	0.535	0.537	0.482	0.472	0.635	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	2.841	3.201	2.738	-	2.738	2.913	2.674	3.483	2.973	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

Starting in FY 2014, Modeling and Simulation Systems Engineering and Integration content transfers to Ballistic Missile Defense Midcourse Sector, Program Element 0603882C (Budget Project MD08).

Project MC22 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD22 of this PE.

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 Integration and Operations Center (MDIOC) is the Missile Defense Agency's (MDA) field operating activity in Colorado Springs, Colorado. It provides the necessary infrastructure and support services through a mission execution platform for MDA elements/components and designated Combatant Commanders' Ballistic Missile Defense System (BMDS) operations executing missions at the MDIOC. The Integration Center is the organization responsible for providing a single, integrated set of skilled personnel matrixed from across MDA to manage this mission. The MDIOC mission facilities consists of a highly secure research and development complex and a mission support module (area) located within a military installation (Schriever Air Force Base) that is adjacent to North American Aerospace Defense Command (NORAD) and United States Northern Command (USNORTHCOM). The MDA Integration Center provides mission critical system technical capabilities and subject matter expertise in a dedicated and adaptable environment that enables developers, testers, and operators to evolve, assess and deliver the capabilities for layered missile defense execution for homeland defense and theater/regional support. The Missile Defense Integration and Operations Center (MDIOC) interfaces with the Information Technology/Information Assurance Enterprise to provide high availability access to worldwide secure communications, network health and status monitoring, mission critical restoral capability, and technical expertise for all MDA directed activities and events. The MDIOC functions as the mission control for BMDS distributed ground test and system wide flight tests. The mission and test directors for these key tests control both main and associated test operations using secure voice, test, and mission network hubs at the MDIOC. The MDIOC also functions (within MDA's capabilities-based acquisition strategy) as the

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
<p>only system-level integration and interoperability mission execution platform for BMDS fire control; and it provides the physical interface between the developers and the Combatant Command warfighters.</p> <p>MDIOC mission facilities contribute to the BMDS by directly supporting the concept of Concurrent Test, Training, and Operations (CTTO) for the BMDS. The MDIOC accomplishes this by providing engineering integration, resource scheduling, configuration management, and implementation development support for MDA and BMDS-level test, training, and operational mission execution. The Integration Center provides engineering and operational integration by:</p> <ul style="list-style-type: none">-Implementing the technical event architectures for the models and simulations used to support missile defense planning seminars, wargames, exercises, and analyses-Supporting the planning and execution of the only end-to-end operator-in-the-loop/element-in-the-loop missile defense wargames-Supporting BMDS Critical Engagement Conditions (CEC) testing and analysis by operating the Test Execution Control (TEC) for distributed BMDS ground tests, and ensuring the integrity of their technical system architecture-Providing network operations and information assurance for all on-site integration activities-Integrating and sustaining the enabling infrastructure, services, and processes that support the operation of designated elements of the BMDS and resident Combatant Command operations and/or support centers-Providing technical support for the BMDS Watch Officers, BMDS Safety Officers, and Information Assurance Officers in their efforts to monitor and assess the health and status of the networks and elements that impact BMDS test and operations-Operating the Joint Early Warning Laboratory for anomaly resolution-Supporting the Intelligence Support Center for critical situational awareness intelligence on worldwide ballistic missile developments that could affect the development and/or operation of the BMDS <p>Missile Defense Integration and Operations Center (MDIOC) Major Program Goals:</p> <ul style="list-style-type: none">-Provide the capabilities and services necessary to support engineering integration, resource scheduling for ground and flight tests, configuration management, and implementation development support of on-site activities-Ensure around the clock support and restoration of designated BMDS operational activities-Improve interface with designated Combatant Command missile defense activities; host/support the headquarters and operations center for United States Strategic Command Joint Functional Component Command - Integrated Missile Defense-Continue to achieve cost effectiveness and efficiencies through the leveraging of existing Missile Defense Integration and Operations Center infrastructure, services, processes, and expertise to support assigned missions-Maintain and improve as designated the reliability, availability, and maintainability of mission critical systems <p>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).</p>		

UNCLASSIFIED

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

APPROPRIATION/BUDGET ACTIVITY	R-1 ITEM NOMENCLATURE
0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	69.249	63.043	54.299	-	54.299
Current President's Budget	58.970	63.043	52.131	-	52.131
Total Adjustments	-10.279	0.000	-2.168	-	-2.168
• 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	-9.954	0.000			
• SBIR/STTR Transfer	-0.325	0.000			
• Other Adjustment	0.000	0.000	-2.168	-	-2.168

Change Summary Explanation

The FY 2014 funding was adjusted to align with current 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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	114.363	56.129	59.842	48.858	-	48.858	56.443	48.849	57.796	49.903	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 Integration and Operations Center (MDIOC) sustains and operates a 24 hours a day, 7 days a week, 365 days a year mission complex for critical research, development, testing, training, and operations for BMDS activities. The MDIOC supports the Ground-based Midcourse Missile Defense Mission Control Center Facility, as well as the Command, Control, Battle Management, and Communications (C2BMC) Integration and Test Centers and the C2BMC Experimentation Laboratories. It provides infrastructure support for the Satellite Tracking and Surveillance System's (STSS) Missile Defense Space Development Center (MDSDC); and the Targets and Countermeasures' (TC) Joint Target Operations Center (JTOC). The MDIOC also provides developmental support to the External Sensors Laboratory (ESL) composed of a common satellite ground station and sensor netting test bed for designated Ballistic Missile Defense System (BMDS) elements. Support to Missile Defense Agency test events is provided based on the Integrated Master Test Plan (IMTP) schedule. It supports BMDS Critical Engagement Conditions testing and analysis through the operation of the Test Execution Control node for distributed BMDS ground tests. During system flight test, the MDIOC provides infrastructure (power, Heating, Ventilation and Air Conditioning, and communications) support to the Flight Test Director and crew, and ensures the protection of those critical facility and test assets throughout the test window. Further, the MDIOC provides the facilities that support operations of the Missile Defense Element, manned by the U.S. Army 100th Missile Defense Brigade, the United States Northern Command (USNORTHCOM) Command, Control, Battle Management and Communications (C2BMC) Command and Control Center (CCC), the United States Strategic Command's (USSTRATCOM's) Joint Functional Component Command-Integrated Missile Defense (JFCC-IMD) and the Missile Defense Agency (MDA) Warfighter Support Center. In addition, the MDIOC supports the MDA Operations Support Center, which provides situational awareness of the health and status of the end-to-end BMDS, and provides network subject matter expertise and technical reach back for the program elements and Combatant Commanders. The MDIOC hosts BMDS wargames and exercises in support of the warfighter, and delivers requisite infrastructure for modeling and simulation to provide and integrate digital modeling and simulation assets to the Digital Simulation Architecture that form system-level constructive simulations for full-envelope BMDS performance assessment with surrogate capability for BMDS ground tests. The MDIOC maintains a technical repository of BMDS Implementation Architectures for real-time operations and configuration control; provides both state change management and asset management technical support for the BMDS; and provides the technical environment for BMDS Watch Officers, Safety Officers, and Information Assurance Officers to their assigned duties. The MDIOC

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

also supports the operations of the Joint Early Warning Laboratory (JEWL), which provides USSTRATCOM with quick response analyses of real-world launches, and rapid anomaly identification and resolution.

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

	FY 2012	FY 2013	FY 2014
<p>Title: Infrastructure Systems and Support</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance) - Continued to maintain a mission execution platform to provide an enabling infrastructure (to include hardware, software maintenance, licenses, and upgrades) that supported MDA Research, Development, Test and Evaluation (RDT&E) efforts at the Missile Defense Integration and Operations Center (MDIOC) for the MDA elements/components, and Combatant Command and Warfighter operational elements - Provided computer hosting of specified threat models and supported the integration of other threat tools as required - Planned/Initiated, when directed, the installation of any additional intelligence data feeds required to support the Operations Support Center (OSC) - Provided file, print, and messaging services; managed and maintained automated patching software, and virus protection servers. Managed and maintained the MDA Enterprise directory services supporting user access to MDA Enterprise network resources; performed preventive maintenance and ensured data recovery capability through proper data backup scheduling and execution - Planned/Designed enhancements to the MDIOC Data Center including floor space allocations, equipment staging areas, and streamlined logistics support function - Designed/Implemented upgrades to audio/visual support to the MDIOC cafeteria supporting the distribution of signals over Internet Protocol <p>MDIOC Communication Services:</p> <ul style="list-style-type: none"> - Installed communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, testing, training, and operational activities - Implemented Classified and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the Missile Defense Integration and Operations Center (MDIOC) VOIP implementation 	<p>18.371</p> <p>0</p>	<p>25.595</p> <p>0</p>	<p>17.378</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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>- Provided telephony services to include: Telephone/Fax Service: Provided local, long distance and Defense Switch Network telephone systems. Telephone Switch Operations: Operated, maintained, and upgraded telephone switches, nodes, and Private Branch Exchanges to include 911 support</p> <p>Network Management Transport Services:</p> <p>- Acquired and distributed mission critical unclassified and secure communications capability to ten resident MDA elements/ components and BMDS and Warfighter operational elements</p> <p>- Provided management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources</p> <p>- Maintained the technical infrastructure and equipment which includes, routers and switches, Core Cryptographic Devices; Edge Encryption Devices; Global Engagement Manager (GEM); base and long-haul communications</p> <p>Information Assurance Systems:</p> <p>- Provided information assurance to MDA elements/components, BMDS elements, and Combatant Command (COCOM) and Warfighter operational elements resident at the Missile Defense Integration and Operations Center (MDIOC)</p> <p>- Maintained DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditation packages; managed the Information Assurance Vulnerability Assessment Program and provided technical assistance to Controls Validation Tests</p> <p>- Provided DoD Information Assurance Certification and Accreditation Process (DIACAP) package management; ensured timely submissions to Information Assurance Manager/Designated Accrediting Authority (IAM/DAA) for MDA Administrative/General Services (GENSER) and Event Packages</p> <p>- Performed architecture design, engineering, and configuration management reviews for all assigned projects</p> <p>- Managed the Information Assurance Vulnerability Assessment and Communications Tasking Order remediation and implementation efforts to ensure Defense Information Systems Agency/Joint Task Force - Global Network Operations (DISA/JTF-GNO) directed compliance</p> <p>Infrastructure Implementation Engineering:</p> <p>- Implemented intelligence hardware/software updates as required to support the Operations Support Center</p> <p>- Provided MDIOC centric test event network related detailed designs in support of Test Events and real world operational events, provided implementation plans, updated interface control documents and performed Change Control and Configuration Management services</p>				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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Planned, designed, tested and operated the IT and communications technical architecture including Internet Protocol addressing schema, routing tables, switching policies, data paths, information assurance controls, fire wall configurations, application configurations, band width allocations for sub networks and eventual post event return to base line - Provided technical health and status monitoring, troubleshooting, and break/fix, IT/Communications support for each of the event architectures including critical asset identification, monitoring, Quality Assurance/Quality Control (QA/QC) seals with configuration management and job control - Implemented final Defense Information Systems Agency - Global Information Grid (DISA GIG) Mission Assurance node configuration <p>Software Licenses, Services and Applications:</p> <ul style="list-style-type: none"> - Maintained critical software licensing and maintenance agreements to meet critical customer and legal requirements, enabled continued software support necessary to maintain the directed computer network defense posture and ensured continued system operational availability - Planned/Designed/Implemented technical lifecycle, refresh, and standardization of MDIOC print services - Implemented MDIOC web cam upgrades and technology refresh - Implemented a consolidated MS Project Server and delivered as a web based service <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance): - Continue to maintain a mission execution platform to provide an enabling infrastructure (to include hardware, software maintenance, licenses, and upgrades) that supports MDA Research, Development, Test and Evaluation (RDT&E) efforts at the Missile Defense Integration and Operations Center (MDIOC) for the MDA elements/components, and Combatant Command and Warfighter operational elements - Provide computer hosting of specified threat models and support the integration of other threat tools as required - Plan/Initiate, when directed, the installation of any additional data feeds required to support the Operations Support Center (OSC) - Provide file, print, and messaging services; manage and maintain automated patching software, and virus protection servers. Manage and maintain the MDA Enterprise directory services supporting user access to MDA Enterprise network resources; perform preventive maintenance and ensure data recovery capability through proper data backup scheduling and execution - Plan/Design enhancements to the MDIOC Data Center including floor space allocations, equipment staging areas, and streamlined logistics support function - Design/Implement upgrades to audio/visual support to the MDIOC supporting the distribution of signals over Internet Protocol 				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013
<p>MDIOC Communication Services:</p> <ul style="list-style-type: none"> - Install communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, testing, training, and operational activities - Implement Classified and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the MDIOC VOIP implementation - Provide telephony services to include: Telephone/Fax Service: Provide local, long distance, Defense Switch Network and Defense Red Switch telephone systems. Telephone Switch Operations: Operate, maintain, and upgrade telephone switches, nodes, and Private Branch Exchanges to include 911 support <p>Network Management Transport Services:</p> <ul style="list-style-type: none"> - Acquire and distribute mission critical unclassified and secure communications capability to ten resident MDA elements/ components and BMDS and Warfighter operational elements - Provide management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources - Maintain the technical infrastructure and equipment which includes, routers and switches, Core Cryptographic Devices; Edge Encryption Devices; Global Engagement Manager (GEM); base and long-haul communications <p>Information Assurance Systems</p> <ul style="list-style-type: none"> - Provide information assurance to MDA elements/components, BMDS elements, and Combatant Command (COCOM) and Warfighter operational elements resident at the Missile Defense Integration and Operations Center (MDIOC) - Maintain DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditation packages; manage the Information Assurance Vulnerability Assessment Program and provide technical assistance to Controls Validation Tests - Provide DoD Information Assurance Certification and Accreditation Process (DIACAP) package management; ensure timely submissions to Information Assurance Manager/Designated Accrediting Authority (IAM/DAA) for MDA Admin/General Services (GENSER) and Event Packages - Perform architecture design, engineering, and configuration management reviews for all assigned projects - Manage the Information Assurance Vulnerability Assessment and Communications Tasking Order remediation and implementation efforts to ensure Defense Information Systems Agency/Joint Task Force - Global Network Operations (DISA/JTF-GNO) directed compliance 			

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>Infrastructure Implementation Engineering:</p> <ul style="list-style-type: none"> - Implement intelligence hardware/software updates as required to support the Operations Support Center - Provide MDIOC centric test event network related detailed designs in support of Test Events and real world operational events, provide implementation plans, update interface control documents and perform Change Control and Configuration Management services - Plan, design, test and operate the IT and communications technical architecture including Internet Protocol addressing schema, routing tables, switching policies, data paths, information assurance controls, fire wall configurations, application configurations, band width allocations for sub networks and eventual post event return to base line - Provide technical health and status monitoring, troubleshooting, and break/fix, IT/Communications support for each of the event architectures including critical asset identification, monitoring, Quality Assurance/Quality Control (QA/QC) seals with configuration management and job control - Implement final Defense Information Systems Agency - Global Information Grid (DISA GIG) Mission Assurance node configuration <p>Software Licenses, Services and Applications:</p> <ul style="list-style-type: none"> - Maintain critical software licensing and maintenance agreements to meet critical customer and legal requirements, enable continued software support necessary to maintain the directed computer network defense posture and ensure continued system operational availability - Plan/Design/Implement technical lifecycle, refresh, and standardization of MDIOC print services - Implement MDIOC web cam upgrade and technology refresh - Implement a consolidated Microsoft Project Server and deliver as a web based service <p>FY 2014 Plans: Provide Infrastructure Systems and Support that ensures continuous operation of the following essential services:</p> <ul style="list-style-type: none"> - Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance) - Missile Defense Integration and Operations Center (MDIOC) Communication Services - Network Management Transport Services - Infrastructure Implementation Engineering - Software Licenses, Services and Applications 			
--	--	--	--

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Decrease in FY 2014 funding is a result of deferring Information Technology conveyance projects (information transport backbone and high capacity network fiber cable installation) to future years.				
Title: Facilities and Maintenance		15.559	18.583	15.198
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: Utilities (Electrical, Gas, Sewer, Water, Steam, & Chilled Water): - Procured utility services through 50th AF Space Wing (Host Base) - Sustained utility infrastructure and delivery systems Environmental, Safety & Occupational Health (ESOH): - Continued maintenance and updating of the program accident prevention plan - Provided required industrial safety training to facility services personnel - Procured and distributed personal protection equipment for contracted activities - Ensured compliance with Hazardous Waste, Hazardous Material Recycling, and National Environmental Policy Act (NEPA) programs - Conducted recurring safety and environmental audits Facilities Operations and Sustainment: - Provided 24 hours a day, 7 days a week, 365 days a year, facility maintenance break/fix response for all facility systems (electrical; Heating, Ventilation, and Air Conditioning; plumbing; locksmith) extended from 15 minute response to two hour response time after normal duty hours - Conducted preventative maintenance inspections (PMIs) for all building systems Facilities Repair & Sustainment: - Installed end-of-life electrical upgrades to one quadrant in the Research Building (Bldg 720) - Completed preliminary and detailed design of end-of-life electrical upgrades to one quadrant for the Research Building (Bldg 720)				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Implemented physical security upgrades to Reproduction Center - Completed Phase II of the Emergency Lighting Modular System - Provided a solution to maintain server racks within the Computing Center within acceptable temperature limits - Procured and replaced end-of-life heating, ventilation, and air conditioning motors - Completed preliminary design of the first floor quadrant in the Research Building (Bldg 720) to accommodate the relocation of the Ground-Based Midcourse Missile Defense Element from the third floor. <p>Facilities Engineering:</p> <ul style="list-style-type: none"> - Conducted Management Process Facility Installation Standard Audits - Provided risk management analysis and mitigation plans - Maintained infrastructure drawings configuration management databases on a limited minimum basis - Developed and documented facility long range planning programming - Provided consulting services, preliminary designs and engineering rough order of magnitude estimates for required infrastructure buildout changes <p>Missile Defense Integration and Operations Center (MDIOC) Operating Expenses:</p> <ul style="list-style-type: none"> - Leased General Services Administration (GSA) Vehicles and two commercial warehouses - Funded Schriever AFB Support Costs (Defense Red Switch Network (DRSN) Support, Local Dial Tone, Long Distance, Cable TV, and Grounds Maintenance) <p>Facility Services:</p> <ul style="list-style-type: none"> - Provided custodial services for over 675,000 square feet of floor space in Buildings 720 and 730 - Provided limited Copy Center and Shuttle Services for over 2,000 personnel - Provided In/Out Processing and Personnel Moves <p>Cable Plant Cubicle Workstation:</p> <ul style="list-style-type: none"> - Installed facility connectivity cabling; provided trouble shooting and repair on a critical basis 				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Installed and reconfigured furniture and workstations on a critical basis <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Utilities (Electrical, Gas, Sewer, Water, Steam, and Chilled Water): - Procure utility services through 50th Air Force Space Wing (Host Base) - Sustain utility infrastructure and delivery systems <p>Environmental, Safety and Occupational Health (ESOH):</p> <ul style="list-style-type: none"> - Continue maintenance and updating of the program accident prevention plan - Provide required industrial safety training to facility services personnel - Procure and distribute personal protection equipment for contracted activities - Ensure compliance with Hazardous Waste, Hazardous Material Recycling, and National Environmental Policy Act (NEPA) programs - Conduct recurring safety and environmental audits <p>Facilities Operations and Sustainment:</p> <ul style="list-style-type: none"> - Provide 24 hours a day, 7 days a week, 365 days a year, facility maintenance break/fix response for all facility systems (electrical; Heating, Ventilation, and Air Conditioning; plumbing; locksmith) response time extended from 15 minutes to two hours after normal duty hours - Conduct preventative maintenance inspections (PMIs) for all building systems <p>Facilities Repair & Sustainment:</p> <ul style="list-style-type: none"> - Electrical distribution upgrades design phase III - Electrical distribution upgrades implementation phase III - Emergency lighting module replacement - Replace building exterior panel sealant phase II and phase III - Provide emergency response and repair of infrastructure systems <p>Facilities Engineering:</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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Conduct Management Process Facility Installation Standard Audits - Provide risk management analysis and mitigation plans - Maintain infrastructure drawings configuration management databases on a limited minimum basis - Develop and document facility long range planning programming - Provide consulting services, preliminary designs and engineering rough order of magnitude estimates for required infrastructure buildout changes <p>Missile Defense Integration and Operations Center (MDIOC) Operating Expenses:</p> <ul style="list-style-type: none"> - Lease General Services Administration (GSA) Vehicles and a commercial warehouse - Fund Schriever Air Force Base Support Costs (Defense Red Switch Network (DRSN) Support, Local Dial Tone, Long Distance, Cable TV, and Grounds Maintenance) <p>Facility Services:</p> <ul style="list-style-type: none"> - Provide custodial services for over 675,000 square feet of floor space in Buildings 720 and 730 - Provide limited Copy Center and Shuttle Services for over 2,000 personnel - Provide In/Out Processing and Personnel Moves <p>Cable Plant Cubicle Workstation:</p> <ul style="list-style-type: none"> - Install facility connectivity cabling; provide trouble shooting and repair on a critical basis - Install and reconfigure furniture and workstations on a critical basis <p>FY 2014 Plans: Provide the Facilities and Maintenance essential for the sustainment and task execution as follows:</p> <ul style="list-style-type: none"> - Utilities (electrical, gas, sewer, water, steam, and chilled water) - Environmental, Safety and Occupational Health (ESOH) - Facilities Operations and Maintenance - Facility Engineering - Missile Defense Integration and Operations Center (MDIOC) Operating Expenses - Facility Services 				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Decrease in FY 2014 funding is a result of deferring replacement of electrical distribution and heating, ventilation, and air conditioning components to future years.				
Title: Engineering and Event Services		5.387	7.809	6.501
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: Mission Assurance and Event Execution Support				
<ul style="list-style-type: none"> - Implemented baseline technical control for all MDIOC mission critical subsystems and services - Executed MDIOC engineering management, quality assurance, configuration management and integration of all mission critical systems including: <ul style="list-style-type: none"> - Technical power distribution, Uninterruptable Power Supply Systems, major transformer substations, and circuit protection - Heating, Ventilation and Air Conditioning, chilled water and steam systems - Secure and non-secure voice communications for BMDS Operations, major tests, and general constituencies - Local and wide area secure data networking environments and network health and status tools 24 hours a day, 7 days a week, 365 days a year - Ensured high availability of integrated MDIOC systems and BMDS Operations support 24 hours a day, 7 days a week, 365 days a year - Implemented `last mile` integration for BMDS Operations, BMDS test, Wargaming, exercise, training and general admin services - Executed comprehensive configuration baseline integrity freezes, periods of interest and work screening for all major tests and real world contingencies - Coordinated process improvement investments across all mission areas - Supported the completion of the relocation of the Space Tracking and Surveillance System (STSS) program office to the Missile Defense Integration and Operations Center (MDIOC). - Executed aggressive, proactive and tailored risk management to ensure integrity and persistent connectivity for all MDIOC missions including: <ul style="list-style-type: none"> - Command, Control, Battle Management and Communications (C2MBC) incremental development and integration across the Integration Laboratory, Experimentation Laboratory (X-Lab), and the International Point of Presence - Ballistic Missile Defense System (BMDS) focused, system and distributed ground testing and Hardware-in-the-Loop (HWIL) execution - Modeling and Simulation program management; Digital Simulation Architecture Development; Validation, Verification & Accreditation 				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012		
<ul style="list-style-type: none"> - BMDS flight tests including Flight Test Ground-Based Midcourse Defense (FTG) execution; Flight Test - Aegis (FTM) and Flight Test - THAAD (FTT) planning, coordination and situational awareness. (For system flight tests directed from the MDIOC, ensure the protection of power, Heating, Ventilation, and Air Conditioning, and communications critical to test execution and control). - Joint Target Operations Center (JTOC) Target of Opportunity (TOO) and target tracking, coordination and visualization - BMDS Operational Support Center and technical integration and implementation services 24 hours a day, 7 days a week, 365 days a year - MDA Intelligence Support Cell and Threat Modeling Center services - BMDS Wargame, exercise and DMETS training execution; Warfighter Support Center program integration - Missile Defense Space Development Center (MDSDC) Satellite Operations, Ground System and experiment support operations, and Airborne Infrared Radar (ABIR), and Space Tracking and Surveillance System (STSS) testing - Enterprise Sensor Laboratory experimental, networking and facility support and coordination - Ground-Based Midcourse Defense (GMD) Fire Control component-level operations, integration, testing, and training - Joint Early Warning Laboratory mission services and connectivity - Combatant Command (COCOM) operations work centers including the United States Northern Command (USNORTHCOM), C2BMC, Control Center (CCC), Army 100th Missile Defense Brigade, and United States Strategic Command's Joint Functional Component Command-Integrated Missile Defense - MDA General Services Network and Operational Support Center and Network Communications Center - MDA Computer Emergency Response Team <p>Technical Watch Support:</p> <ul style="list-style-type: none"> - Provided on-site technical environment for BMDS Watch Officers, Safety Officers, and Information Assurance Officers to execute their duties 8 hours a day, 5 days a week with a capability to surge to 24 hours a day, 7 days a week for contingency operations - Implemented recall procedures to augment subject matter expertise availability during contingencies and major events - Executed tabletop exercises to assess readiness for Combatant Command (COCOM) Operational contingencies and major BMDS tests - Provided state change management and asset management technical support for the BMDS - Coordinated, reported and escalated critical information and BMDS test and operational event information to all MDIOC technical and management staff to ensure rapid break/fix actions are executed <p>JNIC JRDC Business & Finance Operations</p> <ul style="list-style-type: none"> - Provided overarching contract and financial management support for all Joint National Integration Center (JNIC) Research and Development Contract (JRDC) integrated programs projects 						

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Provided engineering coordination, resource management, and event integration across all Missile Defense Integration and Operations Center (MDIOC) mission areas - Conducted continuous process improvement and implementation across all JRDC execution and MDIOC missions - Delivered integrated skill mix planning, coordination and workforce deployment across the dynamic spectrum of MDIOC events - Executed integrated resource forecasting and de-confliction - Performed project management for discrete enterprise enhancements Event Architecture and Engineering Design - Coordinated design and implementation of technical architectures for all major MDIOC hosted Ballistic Missile Defense System (BMDS) tests, training and operations - Delivered technical documentation packages for all major BMDS flight tests, ground tests, training and Combatant Command (COCOM) exercise support - Led requirements coordination and technical architecture enhancements for BMDS wargame, exercise and training networks - Updated BMDS end-to-end COCOM deployed architecture as-built documentation reflecting new incremental content and deployments - Maintained a technical repository of BMDS Implementation Architectures for real-time operations and configuration management <p>Event and Personnel Support:</p> <ul style="list-style-type: none"> - Provided quality event planning, coordination, logistics, security access and host support for all MDIOC events and visitors - Delivered integrated service coordination for all MDIOC event and protocol support including: <ul style="list-style-type: none"> - Event Registration Web site - Offsite event registration - Security processing, including clearance verification and badging - Coordination of group lodging - Arrangement/Coordination/Scheduling of Bus Transportation - Liaison between event Point of Contact (POC) and catering POC - Reserved, setup, and coordinated access for all primary shared MDIOC conference rooms - Operated Audio Visual equipment during events - Prepared and conducted official ceremonies; coordinated and hosted Distinguished Visitor itineraries; obtained information disclosure approval; coordinated offsite dinners and socials <p>FY 2013 Plans: Mission Assurance and Event Execution Support</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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Implement baseline technical control for all Missile Defense Integration and Operations Center (MDIOC) mission critical subsystems and services - Execute MDIOC engineering management, quality assurance, configuration management and integration of all mission critical systems including: <ul style="list-style-type: none"> - Technical power distribution, Uninterruptable Power Supply Systems, major transformer substations, and circuit protection - Heating, Ventilation and Air Conditioning, chilled water and steam systems - Secure and non-secure voice communications for Ballistic Missile Defense Systems (BMDS) ;Operations, major tests, and general constituencies - Local and wide area secure data networking environments and network health and status tools 24 hours a day, 7 days a week, 365 days a year - Ensure high availability of integrated MDIOC systems and BMDS Operations support 24 hours a day, 7 days a week, 365 days a year - Implement `last mile` integration for BMDS Operations, BMDS test, War gaming, exercise, training and general admin services - Execute comprehensive configuration baseline integrity freezes, periods of interest and work screening for all major tests and real world contingencies - Coordinate process improvement investments across all mission areas - Execute aggressive, proactive and tailored risk management to ensure integrity and persistent connectivity for all MDIOC missions including: <ul style="list-style-type: none"> - Command, Control, Battle Management and Communications (C2MBC) incremental development and integration across the Integration Laboratory, Experimentation Laboratory (X-Lab), and the International Point of Presence - BMDS focused, system and distributed ground testing and Hardware-in-the-Loop (HWIL) execution - Modeling and Simulation program management; Digital Simulation Architecture Development; Validation, Verification and Accreditation - BMDS flight tests including Flight Test Ground-Based Midcourse Defense (FTG) execution; Flight Test - Aegis (FTM) and Flight Test - THAAD (FTT) planning, coordination and situational awareness. (For system flight tests directed from the MDIOC, ensure the protection of power, Heating, Ventilation and Air Conditioning, and communications critical to test execution and control). - Joint Target Operations Center (JTOC) Target of Opportunity (TOO) and target tracking, coordination and visualization - BMDS Operational Support Center and technical integration and implementation services 24 hours a day, 7 days a week, 365 days a year - MDA Intelligence Support Cell and Threat Modeling Center services - BMDS Wargame, exercise and DMETS training execution; Warfighter Support Center program integration - Missile Defense Space Development Center (MDSDC) Satellite Operations, Ground System and experiment support operations, and Airborne Infrared Radar (ABIR); and Space Tracking and Surveillance System (STSS) testing - Enterprise Sensor Laboratory experimental, networking and facility support and coordination 			

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<ul style="list-style-type: none"> - Ground-Based Midcourse Defense (GMD) Fire Control component-level operations, integration, testing, and training - Joint Early Warning Laboratory mission services and connectivity - Combatant Command (COCOM) operations work centers including the United States Northern Command (USNORTHCOM) Command, Control, Battle Management and Communications (C2BMC) Control Center (CCC), Army 100th Missile Defense Brigade, and United States Strategic Command's Joint Functional Component Command-Integrated Missile Defense - MDA General Services Network and Operational Support Center and Network Communications Center - MDA Computer Emergency Response Team <p>Technical Watch Support</p> <ul style="list-style-type: none"> - Provide on-site technical environment for Ballistic Missile Defense System (BMDS) ;Watch Officers, Safety Officers, and Information Assurance Officers to execute their duties 8 hours a day, 5 days a week with a capability to surge to 24 hours a day, 7 days a week for contingency operations - Implement recall procedures to augment subject matter expertise availability during contingencies and major events - Execute tabletop exercises to asses readiness for COCOM Operational contingencies and major BMDS tests - Provide state change management and asset management technical support for the BMDS - Coordinate, report and escalate critical information and BMDS test and operational event information to all Missile Defense Integration and Operations Center (MDIOC) technical and management staff to ensure rapid break/fix actions are executed <p>Joint National Integration Center (JNIC) Research and Development Contract (JRDC) Business and Finance Operations</p> <ul style="list-style-type: none"> - Provide overarching contract and financial management support for all JNIC JRDC integrated programs projects - Provide engineering coordination, resource management, and event integration across all MDIOC mission areas - Conduct continuous process improvement and implementation across all JRDC execution and MDIOC missions - Deliver integrated skill mix planning, coordination and workforce deployment across the dynamic spectrum of MDIOC events - Execute integrated resource forecasting and de-confliction - Perform project management for discrete enterprise enhancements <p>Event Architecture & Engineering Design:</p> <ul style="list-style-type: none"> - Coordinate design and implementation of technical architectures for all major MDIOC hosted BMDS tests, training and operations - Deliver technical documentation packages for all major BMDS flight tests, ground tests, training and COCOM exercise support 			
---	--	--	--

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Lead requirements coordination and technical architecture enhancements for Ballistic Missile Defense System (BMDS) ;wargame, exercise and training networks - Update BMDS end-to-end Combatant Command (COCOM) deployed architecture as-built documentation reflecting new incremental content and deployments - Maintain a technical repository of BMDS Implementation Architectures for real-time operations and configuration management <p>FY 2014 Plans: Provide Mission Assurance and Event Services to reduce risk of infrastructure failures, prevent over-taxing of shared resources, and ensure the rapid restoration of impacted services through the following:</p> <ul style="list-style-type: none"> - Mission Assurance - Technical Watch Support - Program quality management, risk management, and earned value management - Event Architecture & Engineering Design 				
<p>Title: Operations and Sustainment</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> - Funded Government Civilian, Contract Support Services (CSS), Training, Travel, Federally Funded Research and Development Centers (FFRDC) - Funded Civilian, Contract Support Services (CSS) and Federally Funded Research and Development Centers (FFRDC) positions supporting operations and sustainment of all MDIOC activities contributing to the mission execution platform - Funded Training and Travel - Defense Efficiency - Contractor Staff Support. As part of the Department of Defense reform agenda, reduces funds below the aggregate level reported in FY 2010 for controls that augment staff functions. (\$1.202 thousands) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Fund Government Civilian, ; CSS, Training, Travel, FFRDC - Fund Civilian, CSS and FFRDC positions supporting operations and sustainment of all Missile Defense Integration and Operations Center (MDIOC) activities contributing to the mission execution platform - Provide quality event planning, coordination, logistics, security access and host support for all ; MDIOC events and visitors - Deliver integrated service coordination for all MDIOC event and protocol support including: 		<p>Articles:</p> <p>5.126 0</p>	<p>6.234 0</p>	<p>6.280 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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Event Registration Web site - Offsite event registration - Security processing, including clearance verification and badging - Coordination of group lodging - Arrangement/Coordination/Scheduling of bus transportation - Liaison between event Point of Contact (POC) and catering POC - Reserve, setup, and coordinate access for all primary shared MDIOC conference rooms - Operate Audio Visual equipment during events - Prepare and conduct official ceremonies; coordinate and host Distinguished Visitor itineraries; obtain information disclosure approval; coordinate offsite dinners and socials - Develop and coordinate Cross-Domain Solution architectures for high priority Ballistic Missile Defense System (BMDS);testing and contingency deployments - Coordinate MDA leveraged involvement in multi-mission integration opportunities sponsored by external agencies and customers - Fund Training and Travel <p>FY 2014 Plans: Continuation of Operations and Sustainment tasks as listed in FY 2013 Plan for:</p> <ul style="list-style-type: none"> - Government Civilian Salaries - Contract Support Services (CSS) - Training - Travel - Federally Funded Research and Development 				
Title: Modeling & Simulation Systems Engineering and Integration		1.686	1.621	0.000
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments: Conducted alternative concepts, technical Feasibility Analysis, and preliminary trade studies. This included technical assessment of unique high-performance design options for SM-3 Block IIB. Provided analysis support to the Chief Architect (Architecture Trade Studies, Initiatives by Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs), Special Programs, and other Special Studies.				

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>		PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Continued design work on high-performance design options for SM-3 Block IIB - Supported pre-mission analysis involving Space Tracking and Surveillance System (STSS) with Aegis testing - Continued to support assigned Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs) and other special studies <p>FY 2013 Plans: Conduct alternative concepts, technical Feasibility Analysis, and preliminary trade studies. This includes technical assessment of unique high-performance design options for SM-3 Block IIB. Provide analysis support to the Chief Architect (Architecture Trade Studies, Initiatives by Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs), Special Programs, and other Special Studies.</p> <ul style="list-style-type: none"> - Continue design work on high-performance design options for SM-3 Block IIB - Support pre-mission analysis involving Space Tracking and Surveillance System (STSS) with Aegis testing - Continue to support assigned Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Combatant Command (COCOMs) and other special studies <p>FY 2014 Plans: Plans captured in Project MD08, Program Element 0603882C beginning in FY 2014 in the amount of \$1.621 million.</p>				
<p>Title: IT Infrastructure Recapitalization</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: - Invested \$10 million in IT Recapitalization to include desk tops, laptops, thin clients, servers, routers, and switches.</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: N/A</p>		10.000 0	0.000 0	0.000 0
<p>Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades</p> <p align="right">Articles:</p> <p>Description: N/A</p>		0.000 0	0.000 0	3.501 0

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>FY 2012 Accomplishments: N/A</p> <p>FY 2013 Plans: N/A</p> <p>FY 2014 Plans: Beginning in FY 2014, the repair, sustainment, and critical upgrade projects were realigned under this accomplishment from Infrastructure Systems and Support Accomplishments and Operations and Maintenance Accomplishments.</p> <p>- Electrical power distribution in two quadrants (Data Center, and the Mission Control Center Facility) to replace end-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas. - Install 60 percent of high capacity network fiber cable in MDIOC (Backbone) that handles the major information and data traffic and serves to connect access networks that provide data connectivity down to the end user.</p>			
Accomplishments/Planned Programs Subtotals	56.129	59.842	48.858

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

<u>Line Item</u>	FY 2012	FY 2013	FY 2014 <u>Base</u>	FY 2014 <u>OCO</u>	FY 2014 <u>Total</u>	FY 2015	FY 2016	FY 2017	FY 2018	Cost To <u>Complete</u>	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
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	381.041	316.929	268.990		268.990	309.901	227.476	262.488	254.913	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	7.940	6.912	6.515		6.515	6.522	7.128	7.289	7.378	Continuing	Continuing

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

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
• 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
• 0603913C: <i>Israeli Cooperative Programs</i>	235.655	99.836	95.782		95.782	96.803	103.940	106.020	107.929	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

Remarks

D. Acquisition Strategy

The Joint National Integration Center Research and Development Contract is the major performing integrated contract that is competed periodically. The acquisition strategy for Missile Defense Integration and Operation Center (MDIOC) mission execution is to employ a contract to perform designated integration and sustainment tasks to conduct Ballistic Missile Defense System (BMDS) Research, Development, Test and Evaluation (RDT&E). The MDIOC is operated by missile defense subject matter experts (SME) composed of Government military and civilian personnel, Federally Funded Research and Development Center (FFRDC), MDIOC Contract Support Services, and major defense contractors.

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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			
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			
Infrastructure Systems and Support - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	37.586	18.371		25.595	Nov 2012	17.378	Nov 2013	-		17.378	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC GSA / Leases / Calibration	MIPR	Various (GSA, 50th Space Wing, Warehouses):Colorado Springs, CO	2.034	1.182		1.198	Dec 2012	1.240	Nov 2013	-		1.240	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	30.509	11.969		15.047	Nov 2012	11.539	Nov 2013	-		11.539	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC Utilities	MIPR	50th Space Wing:Schriever AFB, CO	4.274	2.408		2.338	Oct 2012	2.419	Oct 2013	-		2.419	Continuing	Continuing	Continuing
Engineering and Event Services - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	23.513	5.387		7.809	Oct 2012	6.501	Oct 2013	-		6.501	Continuing	Continuing	Continuing
Operations and Sustainment - FFRDC	FFRDC	MDIOC:Colorado Springs, CO	1.053	0.371		0.383	Oct 2012	0.395	Oct 2013	-		0.395	Continuing	Continuing	Continuing
Operations and Sustainment - Operations & Sustainment	Allot	MDIOC:Colorado Springs, CO	6.667	2.772		3.218	Oct 2012	3.263	Oct 2013	-		3.263	Continuing	Continuing	Continuing

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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			
Operations and Sustainment - Support Services	C/FFP	SRS/ManTech/ MiDAESS Multi:Colorado Springs, CO	5.639	1.916		2.494	Oct 2012	2.481	Oct 2013	-		2.481	Continuing	Continuing	Continuing
Operations and Sustainment - Travel and Training	Allot	MDIOC:Colorado Springs, CO	0.268	0.067		0.139	Oct 2012	0.141	Oct 2013	-		0.141	Continuing	Continuing	Continuing
Modeling & Simulation Systems Engineering and Integration - BMDS Architecture	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	2.820	1.686		1.621	Oct 2012	0.000		-		0.000	3.537	9.664	0.000
IT Infrastructure Recapitalization - Information Technology	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	0.000	10.000		0.000		0.000		-		0.000	0.000	10.000	0.000
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems:Colorado Springs, CO	0.000	0.000		0.000		3.501	Nov 2013	-		3.501	Continuing	Continuing	Continuing
Subtotal			114.363	56.129		59.842		48.858		0.000		48.858			

Remarks

Funds for utilities and base communications are specified in the Inter-service Support Agreement with the 50th Space Wing. In addition, the Missile Defense Integration and Operations Center (MDIOC) provides Federally Funded Research and Development Center (FFRDC) and Technical Contract Support Services employees, for MDIOC operations and oversight of the Joint Research and Development Contractor (JRDC), as well as funding for JRDC work as required by the government. FY 2012 IT Infrastructure Recapitalization did not exist in FY 2010 and FY 2011; Investment of \$10 million in IT Recapitalization in 2012 included desk tops, laptops, thin clients, servers, routers, and switches. Approximately ten percent of the 12,850 desktop computers, laptops, and thin client devices within the Missile Defense Agency are older than five years compared to an industry refresh standard of three years. Continuing to extend refresh rates is increasing the risk for downtime and increased labor requirements to sustain obsolete systems.

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

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
FY 2012 Plans captured in Project MD01, PE 0603896C

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	114.363	56.129	59.842	48.858	0.000	48.858			

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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
Vigilant Shield 12	▲																											
Global Thunder 12	▲																											
Electrical Power Distribution Upgrade Phase II Implementation	+ +																											
Increase quadrant communication rooms Power and HVAC capacity (Data Center)	+ +	+ +																										
GTX-04e (System Ground Test)		●																										
Keen Edge Q2		▲																										
Eagle Resolve 12			▲																									
BMD5 Wargame 12			▲																									
FTM-18 (Aegis Intercept Flight Test)			◆																									
FTM-16 E2a (Aegis Intercept Flight Test)			◆																									
Nimble Titan Q3			▲																									
Terminal Fury 12			▲																									
Global Lightening 12			▲																									
FTM-19 E2 (Aegis Intercept Flight Test)				◇																								
FTP-06 (PATRIOT Intercept Flight Test)				◆																								
FTP-07 (PATRIOT Intercept Flight Test)				◆																								
Global Thunder 13				▲																								
GTI-04e (VV&A) (System Ground Test)				●																								
Vigilant Shield 13				▲																								
Electrical Power Distribution Upgrade Phase III Design					+	+																						
AST-14 (Israeli Cooperative Intercept Flight Test)											△																	
FTG-06b (GM Intercept Flight Test)				△																								
Replace building exterior panel sealant Phase II and Phase III																												
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)																						○						
FTM-21 E1 (Aegis Flight Test) E1 (Simulated Intercept), E2 (Simulated Intercept), E3 (Intercept)																												
GTI-04e (DT (System Ground Test)																												
FTX-19 E1 (Aegis Simulated Intercept Flight Test)																												

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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
FTM-22 E2 (Aegis Intercept Flight Test)																												
PA-04 Performance Assessment 04							◆																					
Terminal Fury 13							△																					
Global Lightening 13							△																					
Electrical Power Distribution Upgrade Phase III Implementation							✦	✦																				
Emergency Lighting System Replacement							✦	✦																				
GTD-04e (DT) (System Ground Test)							○																					
FTP-08 (PATRIOT Intercept Flight Test)							◆																					
GTD-04e (VV&A) (System Ground Test)							○																					
GTI-04e (OT) (System Ground Test)							○																					
GTD-04e (OT) (System Ground Test)							○																					
Power distribution in two quadrants (Data Center, OSC, BNOSC, MCCF)									✦	✦	✦	✦																
Install 60 percent of high capacity network fiber cable in MDIOC (Backbone)									✦	✦	✦	✦																
HVAC repair and sustainment (Data Center)													✦	✦	✦	✦												
Install 100 percent of high capacity network fiber cable in MDIOC (Sonnet ring - Mission Areas) Completes network fiber installation													✦	✦	✦	✦												
Install remaining high capacity network fiber cable in MDIOC (Backbone)													✦	✦														
Architectural repairs (External Sealant - south side)													✦	✦														
Increase Ethernet to meet MDA 10GB capacity (Ops)													✦	✦														
Fire/Safety Compliance																✦	✦											
Architectural repairs (External sealant - north side)																					✦	✦						
Power distribution in one quadrant (Test)																					✦	✦						
Increase quadrant communication rooms Power and HVAC capacity (TEST)																					✦	✦						
Power distribution in one quadrant (MDSDC)																					✦	✦						
Increase Ethernet to meet MDA 10GB capacity (Test)																					✦	✦						

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</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				
HVAC repair and sustainment (OSC, BNOSC)																																
Environmental protection/greening (replace evaporative cooler - 1 unit)																																
Power distribution in two quadrants (C2BMC and Modeling & Sim)																																

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Vigilant Shield 12	1	2012	1	2012
Global Thunder 12	1	2012	1	2012
Electrical Power Distribution Upgrade Phase II Implementation	1	2012	2	2012
Increase quadrant communication rooms Power and HVAC capacity (Data Center)	1	2012	4	2012
GTX-04e (System Ground Test)	2	2012	2	2012
Keen Edge Q2	2	2012	2	2012
Eagle Resolve 12	3	2012	3	2012
BMDS Wargame 12	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-16 E2a (Aegis Intercept Flight Test)	3	2012	3	2012
Nimble Titan Q3	3	2012	3	2012
Terminal Fury 12	3	2012	3	2012
Global Lightening 12	3	2012	3	2012
FTM-19 E2 (Aegis Intercept Flight Test)	4	2012	4	2012
FTP-06 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTP-07 (PATRIOT Intercept Flight Test)	4	2012	4	2012
Global Thunder 13	1	2013	1	2013
GTI-04e (VV&A) (System Ground Test)	1	2013	1	2013
Vigilant Shield 13	1	2013	1	2013
Electrical Power Distribution Upgrade Phase III Design	1	2013	2	2013
AST-14 (Israeli Cooperative Intercept Flight Test)	1	2014	1	2014
FTG-06b (GM Intercept Flight Test)	4	2012	4	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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Replace building exterior panel sealant Phase II and Phase III	2	2013	3	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2013	3	2013
FTM-21 E1 (Aegis Flight Test) E1 (Simulated Intercept), E2 (Simulated Intercept), E3 (Intercept)	3	2013	3	2013
GTI-04e (DT (System Ground Test)	1	2013	1	2013
FTX-19 E1 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	3	2013	3	2013
PA-04 Performance Assessment 04	3	2013	3	2013
Terminal Fury 13	3	2013	3	2013
Global Lightening 13	3	2013	3	2013
Electrical Power Distribution Upgrade Phase III Implementation	3	2013	4	2013
Emergency Lighting System Replacement	3	2013	4	2013
GTD-04e (DT) (System Ground Test)	4	2013	4	2013
FTP-08 (PATRIOT Intercept Flight Test)	4	2013	4	2013
GTD-04e (VV&A) (System Ground Test)	4	2013	4	2013
GTI-04e (OT) (System Ground Test)	4	2013	4	2013
GTD-04e (OT) (System Ground Test)	4	2013	4	2013
Power distribution in two quadrants (Data Center, OSC, BNOSC, MCCF)	1	2014	4	2014
Install 60 percent of high capacity network fiber cable in MDIOC (Backbone)	1	2014	4	2014
HVAC repair and sustainment (Data Center)	1	2015	4	2015
Install 100 percent of high capacity network fiber cable in MDIOC (Sonnet ring - Mission Areas) Completes network fiber installation	1	2015	4	2015
Install remaining high capacity network fiber cable in MDIOC (Backbone)	2	2015	3	2015
Architectural repairs (External Sealant - south side)	2	2015	3	2015
Increase Ethernet to meet MDA 10GB capacity (Ops)	2	2015	3	2015
Fire/Safety Compliance	2	2016	3	2016

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>
---	---	--

Events	Start		End	
	Quarter	Year	Quarter	Year
Architectural repairs (External sealant - north side)	2	2017	3	2017
Power distribution in one quadrant (Test)	2	2017	3	2017
Increase quadrant communication rooms Power and HVAC capacity (TEST)	2	2017	3	2017
Power distribution in one quadrant (MDSDC)	2	2017	3	2017
Increase Ethernet to meet MDA 10GB capacity (Test)	3	2017	4	2017
HVAC repair and sustainment (OSC, BNOSC)	3	2017	4	2017
Environmental protection/greening (replace evaporative cooler - 1 unit)	3	2017	4	2017
Power distribution in two quadrants (C2BMC and Modeling & Sim)	1	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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MC22: <i>Cyber Operations</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
MC22: <i>Cyber Operations</i>	-	0.000	0.000	0.535	-	0.535	0.537	0.482	0.472	0.635	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 MC22 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MD22 of this PE.

A. Mission Description and Budget Item Justification

The Missile Defense Integration and Operations Center (MDIOC) conducts Cyber Defensive Operations through Key Management Infrastructure and Information Assurance Training which interfaces with the Information Technology/Information Assurance Enterprise to provide secure communications, network health and status monitoring, mission critical restoral capability, and technical expertise.

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

	FY 2012	FY 2013	FY 2014
Title: Cyber Defensive Operations	0.000	0.000	0.535
Articles:	0	0	0
Description: The Missile Defense Integration and Operations Center (MDIOC) conducts Defensive Cyber Operations in the following categories:			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: N/A			
FY 2014 Plans: Key Management Infrastructure			
- The MDIOC interfaces with the Information Technology/Information Assurance Enterprise to provide for the generation, production, control and distribution, and training for utilizing the keying material used with the Agency's cryptographic devices.			
Information Assurance Training			

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MC22: <i>Cyber Operations</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- The MDIOC maintains an Information Assurance (IA) certified workforce through continuous IA training as required by DoD Directive 8570.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.535

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	PROJECT MC22: <i>Cyber Operations</i>
---	---	---

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			
Cyber Defensive Operations - Cyber Defensive Operations	C/CPAF	MDIOC/Northrop Grumman Mission Systems: Colorado Springs, CO	0.000	0.000		0.000		0.535	Nov 2013	-		0.535	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.535		0.000		0.535			

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	0.535	0.000	0.535			

Remarks
N/A

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</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>	-	2.841	3.201	2.738	-	2.738	2.913	2.674	3.483	2.973	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	2.841	3.201	2.738
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	2.841	3.201	2.738

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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</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 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</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 Facilities, Operations, and Maintenance	MIPR	Various:Multi: AK, AL, CA, CO, VA	0.000	2.600		2.701	May 2013	2.238	May 2014	-		2.238	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various:Multi: AL, CA, CO, VA	0.000	0.241		0.000		0.000		-		0.000	0.241	0.482	0.000
Program Wide Support - Agency Operations and Support Services	Reqn	Various:Multi: AK, AL, CA, CO, VA	0.000	0.000		0.500	Dec 2012	0.500	Dec 2013	-		0.500	Continuing	Continuing	Continuing
Subtotal			0.000	2.841		3.201		2.738		0.000		2.738			

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	2.841	3.201	2.738	0.000	2.738			

Remarks
N/A

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 0603906C: <i>Regarding Trench</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	-	15.075	11.371	13.864	-	13.864	16.554	10.116	9.550	9.864	Continuing	Continuing
MD35: <i>Regarding Trench</i>	-	15.075	11.371	13.864	-	13.864	16.554	10.116	9.550	9.864	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

N/A

A. Mission Description and Budget Item Justification

This program is reported in accordance with Title 10, United States Code, Section 119(a)(1) in the Special Access Program Annual Report to Congress.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	15.775	11.371	10.369	-	10.369
Current President's Budget	15.075	11.371	13.864	-	13.864
Total Adjustments	-0.700	0.000	3.495	-	3.495
• 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	-0.224	0.000			
• SBIR/STTR Transfer	-0.476	0.000			
• Other Adjustment	0.000	0.000	3.495	-	3.495

Change Summary Explanation

The FY 2014 adjustments reflect a realignment to Department of Defense priorities.

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603907C: <i>Sea Based X-Band Radar (SBX)</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	41.152	183.506	9.730	44.478	-	44.478	54.514	46.232	47.466	51.287	Continuing	Continuing
MD46: <i>Sea Based X-Band Radar (SBX) Development</i>	-	32.680	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.680
MX46: <i>Sea Based X-Band Radar Development Support</i>	41.152	143.570	9.236	42.143	-	42.143	51.864	43.863	44.803	48.463	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	7.256	0.494	2.335	-	2.335	2.650	2.369	2.663	2.824	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

Beginning in FY 2013, the Sea-Based X-Band Radar (SBX) will be placed in a limited test support status, recallable to active operational status when indications and warnings indicate need for enhanced discrimination. The FY 2014 increase reflects a realignment of funds from the Ballistic Missile Defense Sensors Program Element 0603884C to continue Limited Test Support Status established in FY 2013.

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 SBX is an advanced X-Band radar that provides the capability to acquire, track, and discriminate the flight characteristics of ballistic missiles. The SBX radar is mounted on a mobile, ocean-going, semi-submersible platform and, thus, can be positioned to cover any region of the globe. The SBX augments the Ballistic Missile Defense System (BMDS) missile tracking sensor architecture as protection against sophisticated Intercontinental Ballistic Missile (ICBM) threats in the Pacific against the homeland. As a high-resolution X-Band radar, it provides valuable support to BMDS flight tests.

The SBX is in a limited test support status, which maintains the ability to support testing while being recallable to an active, operational status when indications and warnings indicate need for enhanced discrimination. SBX will be located in a Pacific port when not required to be at sea. SBX will support BMDS and Ground-Based Missile Defense (GMD) flight and ground testing. SBX will maintain certifications for operations at sea, and integration with the BMDS, ready for recall to active operational status.

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).

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>
---	--

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	176.831	9.730	9.725	-	9.725
Current President's Budget	183.506	9.730	44.478	-	44.478
Total Adjustments	6.675	0.000	34.753	-	34.753
• 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	6.675	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	34.753	-	34.753

Change Summary Explanation

The FY 2014 increase reflects a realignment of funds from the Ballistic Missile Defense Sensors Program Element 0603884C to continue Limited Test Support Status established in FY 2013.

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</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
MD46: <i>Sea Based X-Band Radar (SBX) Development</i>	-	32.680	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	32.680
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

Beginning in FY 2013, the Sea-Based X-Band Radar (SBX) will be placed in a limited test support status, recallable to active operational status when indications and warnings indicate need for enhanced discrimination.

A. Mission Description and Budget Item Justification

For FY 2012, this project provides for the development and sustainment of SBX software. Other operations and support activities described above are provided in Budget Project MX46.

For FY 2013 and beyond, SBX limited software sustainment is provided in Budget Project MX46.

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

	FY 2012	FY 2013	FY 2014
Title: SBX Software Development and Maintenance	32.680	0.000	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Maintained SBX Build 3.1 configuration			
-Fixed Level 1 and 2 BMDS Test Incident Reports (BTIR`s) and Weapon System Test Reports (WSTR`s)			
-Began development of software upgrades for X-Band Radar debris mitigation			
FY 2013 Plans:			
For FY 2013 and beyond, this work is stopped as a cost savings measure.			
FY 2014 Plans:			
N/A			
Accomplishments/Planned Programs Subtotals	32.680	0.000	0.000

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
---	--	---

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>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 0603891C: <i>Special Programs - MDA</i>	287.056	272.387	286.613		286.613	368.556	370.561	351.220	347.571	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
• 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

Remarks

D. Acquisition Strategy

The SBX follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development and evolutionary acquisition.

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</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			
SBX Software Development and Maintenance - Software Dev & Maintenance	SS/CPAF	Raytheon:MA	0.000	32.680		0.000		0.000		-		0.000	0.000	32.680	79.726
Subtotal			0.000	32.680		0.000		0.000		0.000		0.000	0.000	32.680	79.726

Remarks
For FY 2013 and beyond, limited software sustainment continues in Budget Project MX46.

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MD46: <i>Sea Based X-Band Radar (SBX) Development</i>
---	--	---

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			

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	32.680	0.000	0.000	0.000	0.000	0.000	32.680	79.726

Remarks
N/A

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development 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
MX46: <i>Sea Based X-Band Radar Development Support</i>	41.152	143.570	9.236	42.143	-	42.143	51.864	43.863	44.803	48.463	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

Beginning in FY 2013, the Sea-Based X-Band Radar (SBX) will be placed in a limited test support status, recallable to active operational status when Indications and warnings indicate need for enhanced discrimination.

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 SBX is in a limited test support status, which maintains the ability to support testing while being recallable to an active, operational status when indications and warnings indicate need for enhanced discrimination. SBX will be located in a Pacific port when not required to be at sea. SBX will support Ballistic Midcourse Defense System (BMDS) and Ground-Based Missile Defense (GMD) flight and ground testing. SBX will maintain certifications for operations at sea, and integration with the BMDS, ready for recall to active operational status.

This project provides for developmental operations and support of the SBX Radar and its four major sub-systems: the self-propelled vessel; the X-Band Radar (XBR); the In-Flight Interceptor Communications System Data Terminal; and the communications network. Developmental operations and support activities include operation and sustainment of the vessel, developmental operation and sustainment of the XBR, limited XBR software support and vessel and shoreside security.

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

	FY 2012	FY 2013	FY 2014
Title: Vessel Operations and Support	106.654	6.196	20.003
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Continued ongoing operations, sustainment, and support of the SBX, the support vessel, and support facilities			
-Continued to support operations of the Navy Transition Office			
-Transitioned to Navy Contracts			

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>		PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Conducted Deployment in Support of Operational Tasking</p> <p>FY 2013 Plans: -Sustain the SBX in limited test support status</p> <p>FY 2014 Plans: -Sustain the SBX in limited test support status -Maintain certification and readiness for operational contingencies -Participate in Ballistic Missile Defense System (BMDS) Ground Based Mid-Course Defense Intercept Flight Test (FTG-08) -The increase reflects the evolving requirements for maintaining SBX in Limited Test Support Status. The amount requested in FY 2014 reflects an annualized funding requirement</p>				
<p>Title: System Force Protection</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: -Continued to provide on-board and portside force protection for the SBX and its off-shore support vessel</p> <p>FY 2013 Plans: -Provide force protection for SBX in limited test support status</p> <p>FY 2014 Plans: -Provide force protection for SBX in limited test support status -The increase reflects the evolving requirements for maintaining SBX in Limited Test Support Status -The amount requested in FY 2014 reflects an annualized funding requirement</p>		4.742 0	0.940 0	4.498 0
<p>Title: XBR Operations and Support</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments: -Continued to operate and sustain the X-Band radar and associated equipment -Sustained mission hardware -Provided and supported operations crew -Implemented reliability and suitability improvements</p>		32.174 0	2.100 0	17.642 0

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Conducted Deployment in Support of Operational Tasking			
FY 2013 Plans: -Sustain the X-Band Radar (XBR) in limited test support status			
FY 2014 Plans: -Sustain the Sea Based X-Band Radar (SBX) in limited test support status -Participate in Ballistic Missile Defense System (BMDS) Ground Based Mid-Course Defense Intercept Flight Test (FTG-08) -The increase reflects the evolving requirements for maintaining SBX in Limited Test Support Status -The amount requested in FY 2014 reflects an annualized funding requirement			
Accomplishments/Planned Programs Subtotals	143.570	9.236	42.143

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

<u>Line Item</u>	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 0603891C: <i>Special Programs - MDA</i>	287.056	272.387	286.613		286.613	368.556	370.561	351.220	347.571	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
• 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

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>

D. Acquisition Strategy

SBX will be contractor operated and maintained through a variety of contracts between the Navy and Missile Defense Agency (MDA). SBX-1 Vessel Management and Security contracts are managed by Military Sealift Command. The SBX X-Band Radar is operated and maintained on contracts managed by MDA. The MDA contracts also support the Army Navy/Transportable Radar Surveillance (AN/TPY-2) and the Ground Based Radar Prototype (GBR-P).

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</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			
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			
Vessel Operations and Support - Fuel	MIPR	Gryphon:MD	0.000	18.968		0.190	Nov 2012	2.173	Nov 2013	-		2.173	Continuing	Continuing	Continuing
Vessel Operations and Support - Navy Transition Office	MIPR	US Navy:AL	0.000	5.424		0.208	Nov 2012	0.000		-		0.000	Continuing	Continuing	Continuing
Vessel Operations and Support - SBX Operations & Support (Vessel)	C/FFP	IAS:HI/NJ	0.000	61.723		2.512	Nov 2012	12.044	Nov 2013	-		12.044	Continuing	Continuing	Continuing
Vessel Operations and Support - SBX Vessel Maintenance	C/FFP	IAS:HI/NJ	4.028	4.028		2.760	Nov 2012	2.941	Nov 2013	-		2.941	Continuing	Continuing	Continuing
Vessel Operations and Support - Vessel Mission Integration	C/FFP	TBD:AL/HI	0.000	16.511		0.526	Dec 2012	2.845	Nov 2013	-		2.845	Continuing	Continuing	Continuing
System Force Protection - Force Protection	SS/CPFF	TBD:Hi	4.742	4.742		0.940	Aug 2013	4.498	Aug 2014	-		4.498	Continuing	Continuing	Continuing
XBR Operations and Support - SBX Communications Support	SS/CIPIF	Boeing:AL/HI	0.000	0.000		0.000		2.601	Nov 2013	-		2.601	Continuing	Continuing	Continuing
XBR Operations and Support - XBR Operations & Support	SS/CIPIF	Raytheon:AL/AK/HI	32.382	32.174		2.100	Nov 2012	15.041	Nov 2013	-		15.041	Continuing	Continuing	Continuing
Subtotal			41.152	143.570		9.236		42.143		0.000		42.143			

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development 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			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

	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	41.152	143.570	9.236	42.143	0.000	42.143			

Remarks
N/A

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</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
Navy Transition (60 days)	▲																											
FTG-06b (GM Intercept Flight Test)				△																								
FTG-09 (GM Intercept Flight Test)											△																	
FTG-11 (GM Intercept Flight Test) (Salvo)															△													
FTG-15 (GM Intercept Flight Test)																			△									
FTG-13 (GM Intercept Flight Test)																											△	

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 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	PROJECT MX46: <i>Sea Based X-Band Radar Development Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Navy Transition (60 days)	1	2012	1	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTG-09 (GM Intercept Flight Test)	4	2014	4	2014
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2015	4	2015
FTG-15 (GM Intercept Flight Test)	4	2016	4	2016
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017

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 0603907C: <i>Sea Based X-Band Radar (SBX)</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>	-	7.256	0.494	2.335	-	2.335	2.650	2.369	2.663	2.824	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
 In FY 2014, Program Wide Support (PWS) reflects a proportional increase as a result of changes to the Sea-Based X-Band Radar (SBX).

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	7.256	0.494	2.335
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	7.256	0.494	2.335

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 0603907C: <i>Sea Based X-Band Radar (SBX)</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 0603907C: <i>Sea Based X-Band Radar (SBX)</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	Allot	Various:Multi: AL, CA, CO, VA	0.000	0.000		0.000		1.804	Jan 2014	-		1.804	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services	MIPR	Various:Multi: AL, CA, CO, VA	0.000	0.000		0.048	Jan 2013	0.048	Jan 2014	-		0.048	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (CPAF)	C/CPAF	Northrop Grumman:CO	0.000	7.256		0.293	Oct 2012	0.300	Oct 2013	-		0.300	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various:Multi: VA,WA	0.000	0.000		0.153	Jul 2013	0.153	Jul 2014	-		0.153	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Dept of Labor:VA	0.000	0.000		0.000		0.030	Mar 2014	-		0.030	Continuing	Continuing	Continuing
Subtotal			0.000	7.256		0.494		2.335		0.000		2.335			

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	7.256	0.494	2.335	0.000	2.335			

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603913C: <i>Israeli Cooperative 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	371.799	235.655	99.836	95.782	-	95.782	96.803	103.940	106.020	107.929	Continuing	Continuing
MD20: <i>Israeli Upper Tier</i>	109.984	66.220	50.892	52.607	-	52.607	54.368	55.660	56.773	57.795	Continuing	Continuing
MD26: <i>Israeli ARROW Program</i>	105.268	58.910	10.665	10.663	-	10.663	10.701	11.142	11.365	11.570	Continuing	Continuing
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	156.547	110.525	38.279	32.512	-	32.512	31.734	37.138	37.882	38.564	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.

Content supports expected contributions from Israel per international agreements.

A. Mission Description and Budget Item Justification

Since 1986, the United States and the State of Israel have cooperated on missile defense. Currently Missile Defense Agency (MDA) has three major projects with Israel to develop and improve their indigenous capability to defend against short and medium range ballistic missiles. These include the Arrow Weapon System (AWS), the David's Sling Weapon System (DSWS) for Short Range Ballistic Missile Defense (SRBMD), and the Arrow-3 Interceptor. Within these projects MDA develops and produces weapon systems, conducts tests, and exercises interoperability between U.S. BMDS and the Israeli Missile Defense Architecture.

U.S.-Israel Cooperative Programs consist of the following major efforts:

Israeli Upper Tier Project:

The Upper Tier Program provides the Arrow 3 missile, increasing the system's capability against advanced medium range threats by providing approximately four times the current Arrow-2 battle space. The primary near term objective for Upper Tier is to demonstrate readiness for a Low Rate Initial Production (LRIP) delivery in FY 2016 through successful flight testing.

Israeli Arrow Weapon System (AWS):

The Arrow System Improvement Program (ASIP) includes block upgrades to the Arrow Weapon System that enhances capabilities against more stressing evolving medium range threats by increasing the total defended area by approximately 50 percent. ASIP elements include the Arrow-2 missile and launcher, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pin (SGP) Radars, and the Hazelnut Tree Launcher Control Center (LCC). Also included is the integration of Block 5 assets which include the Arrow-3 missile and launcher. Arrow Block 5, under the ASIP agreement will also incorporate a Long Range Detection

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 0603913C: <i>Israeli Cooperative Programs</i>
---	--

suite that consists of an unmanned aerial vehicle Airborne Early Warning System (ABEWS) and a S-Band Silver Oak radar for increased sensor range, early detection and enhanced raid size capacity. The program also includes the continued development of Arrow's interoperability with U.S. Ballistic Missile Defense Systems (BMDS). Related activities include the Israeli Test Bed (ITB) and the Israeli Systems Architecture and Integration (ISA&I) study that assesses requirements and growth paths for the 2025 Israel Missile Defense Architecture.

Short Range Ballistic Missile Defense (SRBMD):

SRBMD, also known as The David's Sling Weapon System (DSWS), is designed to counter short range rockets and missiles and serve to fill the lower-tier gap between the Arrow Weapon System and Iron Dome. The first fielded block capability will perform the short range rocket and missile defense mission. Subsequent blocks will address a cruise missile defense capability. David's Sling Weapon System (DSWS) elements include the Stunner Interceptor, Missile Firing Unit (MFU), Multi-Mission Radar (MMR), and the Golden Almond Battle Management Center (BMC). The main near term objectives for DSWS are successful completion of Low Rate Initial Production (LRIP) in FY 2014, initiation of Interceptor Full Rate Production (FRP), and completion of final Block 1 flight testing.

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	235.700	99.836	95.782	-	95.782
Current President's Budget	235.655	99.836	95.782	-	95.782
Total Adjustments	-0.045	0.000	0.000	-	0.000
• 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	-0.045	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

N/A

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</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
MD20: <i>Israeli Upper Tier</i>	109.984	66.220	50.892	52.607	-	52.607	54.368	55.660	56.773	57.795	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
 This project code encompasses the Missile Defense Agency's (MDA) U.S.-Israeli cooperative program for the Israeli Upper Tier Program.

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
 This project provides funding for the Upper Tier component of the Arrow Weapon System (AWS) development. The Upper Tier Interceptor will enhance Israel's indigenous capability to defend against short and medium range ballistic missiles by increasing the battle space by a factor of four. The scope of the Upper Tier Program covers interceptor development, testing, initial lot production, and integration with the Block 5 AWS. The United States through the cooperative effort gains knowledge and experience of the Israeli Defense Forces operation of a multi-layered defense architecture. This project also includes the development of the Silver Sparrow Air-Launched Target which is necessary to validate the performance of the Arrow 3 Missile.

The Upper-Tier Interceptor Project Agreement was signed in 2010. This agreement states that the project will be jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement also documents the U.S.-Israeli cost share, in which the development costs will be equitable between the U.S. and Israel.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: Upper Tier	66.220	50.892	52.607
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Conducted 2 Element Level Knowledge Point demonstrations to provide critical data to assess viability of component design.			
-Conducted Software Critical Design Review for Fly Out Number 1.			
-Conducted preparation activities for Arrow 3 Fly Out Number 1.			
-Demonstrated seeker functional capability and system performance.			

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Performed Static Fire Test for Booster and Kill Vehicle. -Conducted Long Range Target Wind Tunnel Test.</p> <p>The following activity moved from FY2012 to FY2013: -Conduct first fly out test of the Arrow 3 interceptor</p> <p>FY 2013 Plans: -Conduct 2 Element Level Knowledge Point demonstrations to provide critical data to assess viability of component design. -Conduct second interceptor fly-out test of the Arrow-3 Interceptor. -Complete data reduction and analysis for the second interceptor fly-out test of the Arrow-3 Interceptor. -Conduct algorithm design review for Intercept Test #1 to verify requirements. -Conduct Long Range Target fly out for validation. -Complete Production Readiness Review for Initial Lot Production.</p> <p>FY 2014 Plans: -Conduct Arrow 3 Interceptor Fly-Out Test Number 2 -Conduct algorithm design review for Intercept Test Number 1 to verify requirements. -Conduct Hardware in the Loop (HWIL) testing to demonstrate electronic optical seeker Knowledge Points. -Conduct lab testing to demonstrate discrimination Knowledge Points. -Conduct preparation activities for Arrow 3 Intercept Test Number 1 -Conduct Arrow-3 Component Production Readiness reviews for Initial Lot Production.</p>			
Accomplishments/Planned Programs Subtotals	66.220	50.892	52.607

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

N/A

Remarks

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Upper Tier Project does not follow standard DoD Acquisition Practices. The Upper-Tier Interceptor Project Agreement under the Research, Development, Test and Evaluation (RDT&E) Framework agreement between the U.S. and Israel creates a joint program office to manage this program. Missile Defense Agency (MDA) and the Israeli Ministry of Defense (IMoD) continue to implement management practices that allow for the more effective use of program management tools to ensure risk is adequately managed to include Knowledge Points that assess Israel's development progress. The

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
<p>DoD U.S. Israeli Cooperative Program Office jointly manages the Upper Tier program with IMoD to ensure that all systems are delivered on time, on budget, and meet the needs of the warfighter. The program is equitably funded between the U.S. and Israel. A portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. In regard to the Upper Tier Interceptor, IMoD will contract with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies.</p>		
<p>E. Performance Metrics Earned Value Management System (EVMS)</p>		

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</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			
Upper Tier - Upper Tier	C/CPFF	Israel Aerospace Industries (IAI):Israel	109.984	66.220		50.892	Dec 2012	52.607	Dec 2013	-		52.607	Continuing	Continuing	Continuing
Subtotal			109.984	66.220		50.892		52.607		0.000		52.607			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>
---	--	---

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			

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	109.984	66.220	50.892	52.607	0.000	52.607			

Remarks
Contract cost reflect U.S. contribution only. 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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</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
Arrow-3 Software Critical Design Review (CDR) for Fly Out Number 1	+	+	+	+																								
Preparation activities for Arrow 3 Fly Out Number 1	+	+	+	+																								
Israeli Cooperative Intercept Flight Test - FY 2013					☆	☆	☆	☆																				
Complete Data Reduction and Analysis of Fly-Out					☆	☆	☆	☆																				
Arrow-3 Production Readiness Review (PRR)					☆	☆	☆	☆																				
Conduct Hardware in the Loop (HWIL) Testing									☆	☆	☆	☆																
Arrow-3 Component Production Readiness Reviews for Initial Lot Production									☆	☆	☆	☆																
Israeli Cooperative Arrow 3 Interceptor Flight Test Number 2 - FY 2014									☆	☆	☆	☆																
Israeli Cooperative Arrow 3 Intercept Test Number 1- FY 2015													☆	☆	☆	☆												
Israeli Cooperative Arrow 3 Intercept Test Number 2- FY 2016																	☆	☆	☆	☆								
Israeli Cooperative Arrow 3 Intercept Test Number 3- FY 2017																					☆	☆	☆	☆				
Israeli Cooperative Arrow 3 Intercept Test Number 4- FY 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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD20: <i>Israeli Upper Tier</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Arrow-3 Software Critical Design Review (CDR) for Fly Out Number 1	1	2012	4	2012
Preparation activities for Arrow 3 Fly Out Number 1	1	2012	4	2012
Israeli Cooperative Intercept Flight Test - FY 2013	1	2013	4	2013
Complete Data Reduction and Analysis of Fly-Out	1	2013	4	2013
Arrow-3 Production Readiness Review (PRR)	1	2013	4	2013
Conduct Hardware in the Loop (HWIL) Testing	1	2014	4	2014
Arrow-3 Component Production Readiness Reviews for Initial Lot Production	1	2014	4	2014
Israeli Cooperative Arrow 3 Interceptor Flight Test Number 2 - FY 2014	1	2014	4	2014
Israeli Cooperative Arrow 3 Intercept Test Number 1- FY 2015	1	2015	4	2015
Israeli Cooperative Arrow 3 Intercept Test Number 2- FY 2016	1	2016	4	2016
Israeli Cooperative Arrow 3 Intercept Test Number 3- FY 2017	1	2017	4	2017
Israeli Cooperative Arrow 3 Intercept Test Number 4- FY 2018	1	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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</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
MD26: <i>Israeli ARROW Program</i>	105.268	58.910	10.665	10.663	-	10.663	10.701	11.142	11.365	11.570	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

This project includes funding for the Arrow Weapon Improvement System (ASIP), Israeli Test Bed (ITB) and the Israeli Systems Architecture and Integration (ISI&A).

The Arrow Weapon System (AWS) continues development of Block 4. Also included is the integration of Block 5 assets which consists of the Arrow-3 missile, launcher and the Long Range Detection Suite (LRDS). The LRDS consists of an unmanned aerial vehicle Airborne Early Warning System (ABEWS) and an S-Band Silver Oak radar for increased sensor range and early detection and enhanced salvo engagement capability. The AWS provides Israel an indigenous capability to defend against short and medium range ballistic missiles. The ASIP effort will enhance the performance of the AWS to defeat longer-range and more robust ballistic missile threats expected to be introduced in the Middle East in the near future. ASIP elements include the Arrow-2 missile and launcher, Citron Tree Battle Management Center (BMC), Green Pine (GP) and Super Green Pine (SGP) Radars, and the Hazelnut Tree Launcher Control Center (LCC). The ASIP also ensures AWS interoperability via Joint Tactical Information Data System (JTIDS) Link-16 common communication architecture with the U.S. BMDs elements such as Terminal High Altitude Area Defense (THAAD), AEGIS, Command, Control, Battle Management and Communications (C2BMC), Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2), and Phased Array Tracking Intercept of Target (PATRIOT) through ground tests, flight tests, and operational exercises.

The Israeli Test Bed (ITB) provides experiments to evaluate Human-In-The-Loop (HIL) battle management. Israeli Systems Architecture and Integration (ISA&I) conducts studies to assess Israel's future 2025 Missile Defense Architecture. The ITB and ISA&I efforts will continue to support AWS development as well as to define future missile defense architectures and growth paths.

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

	FY 2012	FY 2013	FY 2014
Title: Arrow System Improvement Program	52.548	4.303	4.301
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Conducted Block 5 Battle Management Center Systems Requirements Review.			

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 0603913C: <i>Israeli Cooperative Programs</i>		PROJECT MD26: <i>Israeli ARROW Program</i>	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014	
<ul style="list-style-type: none"> -Conducted Long Range Detection Suites (Airborne Early Warning System) Preliminary Design Review. -Conducted Arrow Weapon System (AWS) Block 4.0 flight test in Israel. -Conducted AWS Block 4 Initial Operations Capability Validation. -Expanded AWS-Ballistic Missile Defense System (BMDS) integration (with Command, Control, Battle Management and Communications (C2BMC), Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2), and Aegis) and demonstrated performance in U.S. BMDS ground test, GTI-04 (Ground Test with Hardware in the Loop) Israel (ISR). -Developed/Finalized Version 2 Software-Adds Seeker Capability. -Completed Software development for Tactical Debriefing Center (TDC). <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete data reduction and analysis for the intercept flight test in Israel to validate models and simulations. -Conduct interoperability ground test with U.S. BMDS. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Conduct interoperability ground test with U.S. Ballistic Missile Defense System (BMDS) to verify data link operations with new software builds for US and Israeli systems. -Conduct Intercept Test with Older and Newer variant of Arrow 2. 					
<p>Title: Israeli Test Bed (ITB)</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Conducted Human in the Loop (HIL) experiment on interoperability missile defense concepts. -Conducted HIL experiment on affect of new mission capabilities on integrated air and missile defense. -Conducted experiment on potential future architecture enhancements. -Conducted exercise with warfighters to further refine Techniques, Tactics and Procedures (TTPs) and Concept of Operations (CONOPs). <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Conduct HIL experiment on regional defense concepts. -Conduct HIL experiment Arrow 2/3 and related Block 5 Integration including integration of external sensors and battle management. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Conduct HIL experiment with warfighters to further define Techniques, Tactics and Procedures (TTPs) and CONOPS 		Articles:	3.535 0	3.535 0	3.535 0

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Conduct exercise with warfighters to further refine TTPs and Concept of Operations (CONOPs).			
Title: Israeli Systems Architecture and Integration (ISA&I)	2.827	2.827	2.827
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: -Conducted U.S. - Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.			
FY 2013 Plans: -U.S. - Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.			
FY 2014 Plans: -Conduct U.S. Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.			
Accomplishments/Planned Programs Subtotals	58.910	10.665	10.663

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

Remarks

D. Acquisition Strategy
As a bi-lateral cooperative program with the State of Israel, the Arrow Program does not follow standard DoD Acquisition Practices. The DoD U.S. Israeli Cooperative Program Office jointly manages the Arrow Program with Israel Ministry of Defense (IMoD) to ensure that all systems are delivered with quality on time, on budget, and meet the needs of the warfighter. The program funding is equitably funded between the U.S. and Israel with Israel providing matching contributions. However, a portion of the Israeli cost share comes from non-financial contributions such as previously completed work prior to joint program initiation. In regard to Arrow System Improvement Program (ASIP), IMoD contracts on behalf of U.S. government with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies. For the Israeli Test Bed, the Missile Defense Agency (MDA) contracts directly with Elbit Systems, Ltd. while IMoD provides an equitable share of the funding to the U.S. Finally, MDA contracts directly with WALES, Ltd for the Israeli System Architecture and Integration program.

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</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			
Arrow System Improvement Program - Arrow System Improvement Program (ASIP)	C/CPFF	Israel Aerospace Industries (IAI):Israel	88.912	52.548		4.303	Dec 2012	4.301	Dec 2013	-		4.301	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) - Israeli Test Bed	C/FFP	Elbit Systems:Israel	10.605	3.535		3.535	Oct 2012	3.535	Oct 2013	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) - ISA&I	C/FFP	Wales LTD:Israel	5.751	2.827		2.827	Oct 2012	2.827	Oct 2013	-		2.827	Continuing	Continuing	Continuing
Subtotal			105.268	58.910		10.665		10.663		0.000		10.663			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>
---	--	--

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	105.268	58.910	10.665	10.663	0.000	10.663			

Remarks
Contract cost reflect U.S. contribution only.

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</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
Israeli Test Bed Exercise FY 2012	+	+	+	+																								
GTI-04 (Israel) - Arrow System Improvement Program event in FY 2012	+	+	+	+																								
Three Israeli Test Bed Experiments FY 2012	+	+	+	+																								
Arrow Weapon System Block 4.0 Flight Test FY 2012	+	+	+	+																								
Three Israeli Test Bed Experiments FY 2013					+	+	+	+																				
Israeli Test Bed Exercise FY 2013					+	+	+	+																				
Interoperability Ground Test (GT) Test FY 2014									+	+	+	+																
Intercept Test with Older and Newer Variants of Arrow 2									+	+	+	+																
Israeli Test Bed Exercise with Warfighter									+	+	+	+																
Israeli Test Bed Human in the Loop Experiment with Warfighter									+	+	+	+																
Israeli Test Bed Exercise to include GT Support FY 2015													+	+	+	+												
Israeli Test Bed Experiments FY 2015													+	+	+	+												
Israeli Test Bed Experiments FY 2016																	+	+	+	+								
Israeli Test Bed Exercise to include GT Support FY 2016																	+	+	+	+								
Israeli Test Bed Experiments FY 2017																					+	+	+	+				
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017																					+	+	+	+				

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD26: <i>Israeli ARROW Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Israeli Test Bed Exercise FY 2012	1	2012	4	2012
GTI-04 (Israel) - Arrow System Improvement Program event in FY 2012	1	2012	4	2012
Three Israeli Test Bed Experiments FY 2012	1	2012	4	2012
Arrow Weapon System Block 4.0 Flight Test FY 2012	1	2012	4	2012
Three Israeli Test Bed Experiments FY 2013	1	2013	4	2013
Israeli Test Bed Exercise FY 2013	1	2013	4	2013
Interoperability Ground Test (GT) Test FY 2014	1	2014	4	2014
Interecept Test with Older and Newer Variants of Arrow 2	1	2014	4	2014
Israeli Test Bed Exercise with Warfighter	1	2014	4	2014
Israeli Test Bed Human in the Loop Experiment with Warfighter	1	2014	4	2014
Israeli Test Bed Exercise to include GT Support FY 2015	1	2015	4	2015
Israeli Test Bed Experiments FY 2015	1	2015	4	2015
Israeli Test Bed Experiments FY 2016	1	2016	4	2016
Israeli Test Bed Exercise to include GT Support FY 2016	1	2016	4	2016
Israeli Test Bed Experiments FY 2017	1	2017	4	2017
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017	1	2017	4	2017

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</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
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	156.547	110.525	38.279	32.512	-	32.512	31.734	37.138	37.882	38.564	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 2006 summer conflict between Israel and Hezbollah underscored the strategic effect of short-range, inexpensive ballistic missile attacks on civilian populations. The current Israeli Missile Defense Architecture has capability against some of these short-range missile threats, but does not provide a cost-effective defense. The goal of the Israeli Short Range Ballistic Missile Defense (SRBMD) program is to provide an affordable defense capability. In March 2005 the U.S. and Israel initiated a joint 18-month feasibility study of a low-cost SRBMD capability as a complement to the Arrow Weapon System. This was followed in May 2006 by the Israeli's down-selection to the David's Sling Weapon System (DSWS) for their SRBMD solution. Under the current Program Agreement, Block 1 provides a baseline capability against large caliber rockets and short range ballistic missiles. The DSWS is comprised of the Stunner Interceptor, Battle Management Center the Multi-Mission Radar, and the Missile Firing Unit.

Under the U.S.-Israeli Project Agreement signed in September 2008, the project is jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. The agreement documents the U.S.-Israeli cost share, in which the development costs are equitably shared between the U.S. and Israel.

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

	FY 2012	FY 2013	FY 2014
Title: SRBMD Program	110.525	38.279	32.512
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Conducted Safe Separation Test 1.1 with production representative canister.			
-Conducted preparation activities for one Block One System Interception Test.			
-Conducted preparation activities for one Block One System Fly-by Test.			
-Completed 3 Knowledge Points to provide critical data to assess viability of subsystem and system designs.			

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Conducted Lower Tier Battle Management Center development System Requirements Review (SRR) and Preliminary Design Review (PDR). -Initiated Block 2 development efforts through System Requirements Review. -Initiated Procurement of Long Lead Items for Initial Lot Production. -Conducted Seeker Critical Design Review. -Conducted Electro Optical Seeker hardware and software testing in a closed and open loop. -Finalized initial Stunner flight control algorithms for Block One. -Conducted Radar Field Test #2 to assess radar acquisition and track capability. <p>The following activities moved out from FY 2012 to FY 2013:</p> <ul style="list-style-type: none"> - Conducted Block One System Interception Test and Block One System Fly-by test - Conduct System Production Readiness Review (PRR) - Conduct Radar Field Test #3 <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Complete data analysis of intercept test to validate Block 1 functionality. -Complete 2 Knowledge Points which provide critical data to assess viability of subsystem and system design and intercept cost. -Complete Block 2 Critical Design Review which expands the DSWS threat set. -Continue Block 3 Development which enables the engagement of an expanded threat set and expands the battle space by 300 percent. -Evaluate Field Test #3 against model and simulation expectations and Technical Performance Measurements. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Conduct ground test and simulations to validate missile and system performance to complete 3 Knowledge points and provide data to assess subsystem and system design robustness. - Conduct 1 Block One system intercept test with production representative interceptor to validate the Block 1 system performance. - Complete DSWS Initial Lot Production (ILP) deliveries. - Complete Initial Lot Production (ILP) delivery of first Battle Management Center. 			
Accomplishments/Planned Programs Subtotals	110.525	38.279	32.512

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

N/A

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>

D. Acquisition Strategy

As a bi-lateral cooperative program with the State of Israel, the Short Range Ballistic Missile Defense (SRBMD) program does not follow standard DoD Acquisition Practices. The DoD U.S. Israeli Cooperative Program Office jointly manages the SRBMD program with Israel Ministry of Defense (IMoD) to ensure that all systems are delivered on time, on budget, and meet the needs of the warfighter. The David's Sling Weapon System (DSWS) Project Agreement requires Israel to contract for the system. For the Stunner Interceptor, Rafael advanced Systems (an Israeli company), subcontracts to Raytheon Missile Systems for certain interceptor components.

E. Performance Metrics

Earned Value Management System (EVMS)

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</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			
SRBMD Program - SRBMD Program	C/CPFF	Rafael:Israel	156.547	110.525		38.279	Dec 2012	32.512	Dec 2013	-		32.512	Continuing	Continuing	Continuing
Subtotal			156.547	110.525		38.279		32.512		0.000		32.512			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

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

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
---	--	--

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			
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			156.547	110.525		38.279		32.512		0.000		32.512			

Remarks
Contract cost reflect U.S. contribution only.

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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</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
Preparation Activities for Block One System Fly-by Test	✦	✦	✦	✦																								
Preparation Activities for Block One System Intercept Test	✦	✦	✦	✦																								
Radar Field Test #2 FY 2012	✦	✦	✦	✦																								
System Flight Test #3 FY 2013					✧	✧	✧	✧																				
System Flight Test #4 FY 2013					✧	✧	✧	✧																				
Block 2.0 Critical Design Review					✧	✧	✧	✧																				
System Flight Test #5 FY 2014									✧	✧	✧	✧																
System Flight Test #6 FY 2015													✧	✧	✧	✧												
System Flight Test #7 FY 2016																	✧	✧	✧	✧								
System Flight Test #8 FY 2017																					✧	✧	✧	✧				
System Flight Test #9 FY 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 0603913C: <i>Israeli Cooperative Programs</i>	PROJECT MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>
---	--	--

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Preparation Activities for Block One System Fly-by Test	1	2012	4	2012
Preparation Activities for Block One System Intercept Test	1	2012	4	2012
Radar Field Test #2 FY 2012	1	2012	4	2012
System Flight Test #3 FY 2013	1	2013	4	2013
System Flight Test #4 FY 2013	1	2013	4	2013
Block 2.0 Critical Design Review	1	2013	4	2013
System Flight Test #5 FY 2014	1	2014	4	2014
System Flight Test #6 FY 2015	1	2015	4	2015
System Flight Test #7 FY 2016	1	2016	4	2016
System Flight Test #8 FY 2017	1	2017	4	2017
System Flight Test #9 FY 2018	1	2018	4	2018

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603914C: <i>Ballistic Missile Defense Test</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	-	484.838	454.400	375.866	-	375.866	436.063	378.063	400.157	451.776	Continuing	Continuing
MT04: <i>BMDS Test Program</i>	-	443.919	431.847	354.715	-	354.715	415.009	358.751	377.801	427.224	Continuing	Continuing
MC04: <i>Cyber Operations</i>	-	0.000	0.000	0.500	-	0.500	0.514	0.523	0.532	0.546	Continuing	Continuing
MX04: <i>BMD Test Development Support</i>	-	33.758	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.758
MD40: <i>Program Wide Support</i>	-	7.161	22.553	20.651	-	20.651	20.540	18.789	21.824	24.006	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

Program-Wide Support, Budget Project MD40, was previously captured in PE 0603888C BMD Test and Targets (Budget Project MD40) for FY 2011 and PE 0603890C BMD Enabling (Budget Project MD40) for FY 2012. Starting in FY 2013, a portion of Program-Wide Support (Budget Project MD40) transfers in from BMD Test and Targets PE 0603888C (Budget Project MD40).

A. Mission Description and Budget Item Justification

As part of the total Ballistic Missile Defense System (BMDS), the Test Program Element (PE) brings the BMDS element capabilities together for an integrated system-level test approach. Based on the Systems Engineering assessments of realistic threat scenarios, test events demonstrate capability of the evolving integrated and layered missile defense system in a simultaneous test and operations environment. The Missile Defense Agency (MDA), in collaboration with its Integrated Master Test Plan (IMTP) stakeholders: Combatant Commands; Service Operational Test Agency (OTA); Director, Operational Test & Evaluation (DOT&E); and Director, Developmental Test and Evaluation (DT&E), employs a systematic review of BMDS testing that establishes a convention for setting test objectives that go beyond simply exercising newly delivered elements of the system. The BMDS Test Program establishes and documents in the IMTP the test requirements for the BMDS developed by Systems Engineering with specific focus on collecting the data needed for the verification, validation and accreditation (VV&A) of the BMDS models and simulations (M&S). The BMDS performance evaluation strategy is to develop models and simulations (M&S) of the BMDS and compare predictions to empirical data collected through comprehensive flight and ground testing to validate accuracy. Systems Engineering develops Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs), which are the conditions and events which define or describe the data to be obtained from flight and ground tests in order to anchor M&S. CECs and EMEs are utilized to design a test to further advance the understanding and confidence of the M&S tool set that will be used to evaluate all possible engagements. MDA testing is based on an integrated developmental and operational test program. The MDA Test Program is based on a commitment to deploy technology that is proven, cost-effective, and adaptable to an evolving security environment. This PE also provides funding to the OTA, which is active in all phases of test planning, execution and post-test analysis, to include the development of the IMTP.

BMDS Test Program Functions:

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 0603914C: <i>Ballistic Missile Defense Test</i>
---	--

- Direct the testing required to verify, validate, and accredit (VV&A) MDA`s models and simulation (M&S).
- Plan tests according to BMDS and Element objectives.
- Develop MDA test policy.
- Execute BMDS ground and flight tests.
- Ensure appropriate data is collected at the necessary fidelity.
- Collect data for BMDS analysis and manage MDA data centers.
- Provide BMDS and Element performance results for IMTP stakeholders.
- Provide final target system integration, target mission logistics and launch execution for BMDS test target systems.
- Provide test infrastructure and resources for flight and ground tests.

Major Test Program Goals:

- Direct planning, execution, analyses, and reporting of BMDS test events to support system verification.
- Improve test execution and discipline for on-time, successful testing.
- Integrate Element test processes into BMDS processes.
- Develop Element lessons learned and best practices to support BMDS test design.
- Provide required infrastructure and environmental compliance for robust BMDS testing.
- Ensure test readiness, realism, and accuracy and improve test execution quality.

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	487.699	454.400	420.357	-	420.357
Current President's Budget	484.838	454.400	375.866	-	375.866
Total Adjustments	-2.861	0.000	-44.491	-	-44.491
• 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	-2.858	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	-0.003	0.000	-44.491	-	-44.491

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 0603914C: *Ballistic Missile Defense Test*

Change Summary Explanation

FY 2014 funding was adjusted to fund modified requirements of the Integrated Master Test Program based on fact-of-life adjustments to Missile Defense Agency's test program.

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</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
MT04: <i>BMDS Test Program</i>	-	443.919	431.847	354.715	-	354.715	415.009	358.751	377.801	427.224	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

The Test Program provides consolidated Missile Defense Agency (MDA) capabilities and resources to support the management and execution of Ballistic Missile Defense System (BMDS) and Element-level testing. With the evolution of the BMDS, testing requirements have expanded beyond those of the individual Elements to include testing of BMDS Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) to enable Independent Verification and Validation (IV&V) of modeling and simulations (M&S).

The MDA Test Program is responsible for all BMDS testing and relies on BMDS Systems Engineering to provide the system test objectives to define the test architecture by developing, updating, coordinating, and assessing the Integrated Master Test Plan (IMTP). The MDA Test Program plans and executes BMDS test events and develops the necessary test policy, test plans, and test infrastructure to conduct an effective test program. The goals of this budget project are to sustain and improve a robust testing program and to enhance M&S efforts to provide, in conjunction with flight and ground testing, confidence to the Combatant Commanders that the missile defense system works.

Activities are grouped into five major areas: 1) Program Planning and Operations; 2) Flight Test; 3) Ground Test; 4) Test Resources; and 5) Engineering Test Analysis.

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

	FY 2012	FY 2013	FY 2014
Title: Program Planning and Operations	116.937	115.295	108.206
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Developed, updated, and coordinated the Integrated Master Test Plan (IMTP).			
-Identified and resolved Operational Test Agency (OTA) issues.			
-Updated and maintained the classified Test Resources Mission Planning Tool (TRMP-T).			

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Developed and maintained hardware and software to support Truth Data Requirements Documents, Truth Data Packages, Integrated Data Management Plans (IDMPs), Data Handling Plans (DHPs), Information Assurance (IA) documentation , on-site truth-quick-look product development, and data planning and management; library operations; test planning and resource de-confliction; test operations support; and pre- and post-test analysis.</p> <p>-Managed the MDA Data Center Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services.</p> <p>-Performed as Information Assurance (IA) manager for test data management networks and infrastructure.</p> <p>-Developed and implemented test policy, standards, directives, and procedures for creating unified BMD test processes.</p> <p>-Coordinated budget planning and execution activities as well as manpower activities.</p> <p>FY 2013 Plans:</p> <p>-Develop, update, and coordinate the Integrated Master Test Plan (IMTP).</p> <p>-Identify and resolve Operational Test Agency (OTA) issues.</p> <p>-Update and maintain the classified Test Resources Mission Planning Tool (TRMP-T) data base.</p> <p>-Develop and maintain hardware and software to support Truth Data Requirements Documents, Truth Data Packages, Integrated Data Management Plans (IDMPs), Data Handling Plans (DHPs), Information Assurance (IA) documentation, on-site truth-quick-look product development, and data planning and management; library operations; test planning and resource de-confliction; test operations support; and pre- and post-test analysis.</p> <p>-Manage the MDA Data Center Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services.</p> <p>-Perform as Information Assurance (IA) manager for test data management networks and infrastructure.</p> <p>-Develop and implement test policy, standards, directives, and procedures for creating unified BMD test processes.</p> <p>-Coordinate budget planning and execution activities as well as manpower activities.</p> <p>FY 2014 Plans:</p> <p>-Continue efforts as listed under FY 2013.</p> <p>-Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes.</p>			
<p>Title: Flight Test</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <p>-Completed test planning and execution for BMDS Flight Test events as shown in Exhibit R-4 Schedule.</p> <p>-Identified and executed focused investments in the BMDS test infrastructure.</p>	116.407 0	86.397 0	69.921 0

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>-Conducted mission planning and range coordination activities, executed target missions, collected and analyzed target system data, provided communications security equipment and management.</p> <p>-Trained and resourced System Mission Managers to lead Integrated Event Test Team mission management and readiness activities across all five test event phases for System and Element flight test and contingency operations.</p> <p>-Identified, monitored and developed burn down plans for target system mission risks for all FY 2012 BMDS missions as defined in the Integrated Master Test Plan (IMTP).</p> <p>FY 2013 Plans:</p> <p>-Complete test planning for BMDS Flight Test events as shown in Exhibit R-4 Schedule.</p> <p>-Identify and execute focused investments in the BMDS test infrastructure.</p> <p>-Conduct mission planning and range coordination activities, execute target missions, collect and analyze target system data, provide communications security equipment and management.</p> <p>-Train and resource System Mission Managers to lead Integrated Event Test Team mission management and readiness activities across all five test event phases for System and Element flight test and contingency operations.</p> <p>-Identify, monitor and develop burn down plans for target system mission risks for all FY2013 BMDS missions as defined in the IMTP.</p> <p>FY 2014 Plans:</p> <p>-Continue data collection plan for Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) required for to verify and validate models and simulations supporting accreditation.</p> <p>-Demonstrate GM Return to Intercept flight test using CE-II 3-stage Ground-Based Interceptor capability (FTG-09).</p> <p>-Demonstrate Aegis Ashore SM-3 Blk IB controlled test vehicle (CTV) performance test (interceptor only; first launch demonstrating system ability to launch, capture and control the SM-3 Blk IB interceptor).</p> <p>-Demonstrate Aegis 4.0.1 SM-3 Blk IB engagement of a MRBM T3 target.</p> <p>-Continue efforts as listed under FY 2013 plans.</p> <p>-Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes.</p>			
--	--	--	--

Title: Ground Test	24.001	21.890	21.520
Articles:	0	0	0

Description: N/A

FY 2012 Accomplishments:

-Completed test planning for BMDS Ground Test events in the Exhibit R-4 schedule.

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Began hardware and software benchmark testing and truth driver and framework integration for GTI-04e (BMDS Integrated Ground Test).</p> <p>-Completed testing for Integrated Ground Test with Israel for GT-04d campaign (GTI-04d ISR), Distributed Ground Test for GT-04d campaign (GTD-04d), Focused Ground Test for GT-04e campaign (GTX-04e) and Rapid Reaction Hardware in the Loop (HWIL) and Distributed testing.</p> <p>-Delivered system-level and test specific execution, mission assurance, and logistics execution.</p> <p>-Delivered ground test planning and execution designs, feasibility assessments, test architectures, test configurations, and resultant data.</p> <p>FY 2013 Plans:</p> <p>-Complete test planning for BMDS Ground Test events in the Exhibit R-4 schedule.</p> <p>-Complete hardware and software benchmark testing and truth driver and framework integration for GTI-04e (BMDS Integrated Ground Test).</p> <p>-Continue development of a dedicated regional test bed and communication nodes</p> <p>-Deliver system-level and test specific execution, mission assurance, logistics execution, communications support, and test equipment.</p> <p>-Deliver ground test planning designs, scenarios, feasibility assessments, test architectures, and test configurations.</p> <p>FY 2014 Plans:</p> <p>-Complete first operational test (OT) series of tests in Ground Test Campaign 04e.</p> <p>-Continue efforts as listed under FY 2013 plans.</p> <p>-Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes.</p>				
Title: Test Resources	Articles:	149.172 0	169.257 0	122.271 0
Description: N/A				
FY 2012 Accomplishments:				
<p>-Developed, maintained, and upgraded, as needed, MDA unique range facilities and instrumentation.</p> <p>-Supported all MDA-sponsored BMDS flight and ground testing conducted in FY 2012 with the full complement of ranges and test infrastructure assets.</p> <p>-Complemented test execution teams by coordinating scheduling, funding, and management of test resource assets.</p> <p>-The Pacific Range Support Team continued to provide efficient planning, coordination, and management of range resources and infrastructure for BMDS Flight Testing throughout the Pacific Test Bed.</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 0603914C: <i>Ballistic Missile Defense Test</i>		PROJECT MT04: <i>BMDS Test Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>-Maintained and upgraded MDA unique ground test facilities to support all BMDS developmental program hardware and software testing. These facilities provided hardware in the loop (HWIL) capability, threat signature measurement capability, and sensor calibration standards.</p> <p>-Maintained and upgraded MDA unique ground test facilities that supported Ballistic Missile Defense System (BMDS) level ground tests, including basic ground test control as well as some Element representations.</p> <p>-Continued development of HWIL equipment including the acquisition of additional hardware and digital element representations to support concurrent ground testing of current BMDS capability and capabilities under development.</p> <p>FY 2013 Plans:</p> <p>-Perform Airborne Sensors (ABS) engine overhauls to support Ballistic Missile Defense System (BMDS) level flight tests</p> <p>-Develop, maintain, and upgrade as needed MDA unique range facilities and instrumentation to include test data collection and dissemination, target characterization and discrimination, and multi-spectral event imagery.</p> <p>-Support all MDA-sponsored BMDS flight and ground testing conducted in FY 2013 with the full complement of ranges and test infrastructure assets.</p> <p>-Test Resource Managers (TRMs) will continue to complement test execution teams by overseeing scheduling, funding, and management of test resource assets.</p> <p>-The Pacific Range Support Team will continue to provide efficient planning, coordination, and management of range resources and infrastructure for BMDS Flight Testing throughout the Pacific Test Bed.</p> <p>-Maintain and upgrade MDA unique ground test facilities to support all BMDS developmental program hardware and software testing. These facilities provide hardware in the loop (HWIL) capability, threat signature measurement capability, and sensor calibration standards.</p> <p>-Maintain and upgrade MDA unique ground test facilities to support Ballistic Missile Defense System (BMDS) level ground tests, including basic ground test control as well as some Element representations.</p> <p>-Continue development of a second suite of HWIL equipment including the acquisition of additional hardware and digital element representations to support concurrent ground testing of current BMDS capability and that under development.</p> <p>-Add hardware and digital element representations to support expansion of the existing HWIL capability as the BMDS evolves. Continue sustainment and development of the Kinetic HWIL facility to support next generation scene development efforts.</p> <p>-Maintain and upgrade MDA unique flight test instrumentation to support Ballistic Missile Defense System (BMDS) level flight tests.</p> <p>FY 2014 Plans:</p> <p>-Continue efforts as listed under FY 2013 plans.</p> <p>-Defer upgrades to the flight test instrumentation.</p> <p>-Defer development of hardware-in-the-loop (HWIL) equipment.</p> <p>-Defer required maintenance of airborne sensor platforms.</p>				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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Reduce operations and maintenance (O&M) requirements for flight test ranges. -Reduce O&M requirements for airborne optics mobile assets. -Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes. <p>Title: Engineering and Test Analysis</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Performed System-level and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP). -Developed Analysis Execution Plans (AEP) and final Test Analysis Reports (TARs) for BMDS test events listed in the IMTP. -Led Joint Analysis Teams (JATs) for BMDS test events listed in the IMTP. -Developed, delivered, and briefed Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for BMDS test events listed in the IMTP. -Incorporated software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. -Populated the MARS Analysis Database with most current test data to support analysis and capability assessments. -Provided Systems Engineering & Integration (SE&I) test configuration management, risk assessment, and anomaly and test incident report review, assessment and closure to enable execution of the ground and flight test program and support data gathering for MDS hardware/software reliability improvements. -Allocated and tracked Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) data requirements and sufficiency for ground and flight tests in accordance with the IMTP. -Defined test objectives and evaluation criteria for all System level test events. -Designed and certified scenarios for ground test events to meet required data collection and satisfy SE&I, Operational Test Agencies (OTA) and Warfighter objectives. -Produced threat data required to enable Ballistic Missile Defense System Ground Tests, Ballistic Missile Defense System. -Used models and simulations (M&S) for pre-test assessment and post-test review and M&S updates. -Provided Performance Assessments for events listed in the IMTP. <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> -Perform System-level analysis and interoperability analysis on BMDS test events listed in the Integrated Master Test Plan (IMTP). -Develop Analysis Execution Plans (AEP) and final Test Analysis Reports (TAR) for BMDS test events listed in the IMTP. Lead Joint Analysis Teams (JAT) for BMDS test events listed in the IMTP. -Develop, deliver, and brief Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR) for BMDS test events listed in the IMTP. -Incorporate software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. 	30.147 0	39.008 0	32.797 0

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 0603914C: <i>Ballistic Missile Defense Test</i>		PROJECT MT04: <i>BMDS Test Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> -Continue to populate the MARS Analysis Database with most current test data to support analysis and capability assessments. -Provide SE&I test configuration management, risk assessment, and anomaly and test incident report review, assessment and closure to enable execution of the ground and flight test program and support data gathering for BMDS hardware/software reliability improvements. -Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency for ground and flight tests in accordance with the IMTP. -Define test objectives and evaluation criteria for all System level test events. -Design and certify scenarios for ground test events to meet required data collection and satisfy Systems Engineering & Integration -(SE&I), Operational Test Agencies (OTA) and Warfighter objectives. -Produce threat data required to enable Ballistic Missile Defense System Ground Tests, Ballistic Missile Defense System -Use models and simulations (M&S) for pre-test assessment and post-test review and M&S updates. -Performance Assessment, as documented in the Ballistic Missile Defense System IMTP. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Define test objectives and evaluation criteria for all System level test events. -Provide engineering support for test events listed in the Integrated Master Test Plan (IMTP): <ul style="list-style-type: none"> -- Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency. -- Perform System-level and interoperability analysis. -- Develop, deliver, and brief Quick Look Brief (QLB), Executive QLB (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR). -- Use models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates. -- Produce the threat data required to enable BMDS ground tests, flight tests and Performance Assessment. -Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to enable execution of the ground and flight test program and support data gathering for BMDS hardware/software reliability improvements. -Design and certify scenarios for ground test events to meet required data collection. -Incorporate software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. -Continue to populate the MARS Analysis Database with most current test data to support analysis and capability assessments. -Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes. 				
Title: Fielding and Integration		7.255	0.000	0.000
Articles:		0	0	0
Description: N/A				

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> -Continued Ballistic Missile Defense System (BMDS) integration planning and capability delivery execution. -Managed BMDS Schedule Baseline. -Updated BMDS Baseline documentation. -Continued to execute the BMDS Change Management process.</p> <p><i>FY 2013 Plans:</i> Refer to Budget Project MD40 Program-Wide Support (PWS)</p> <p><i>FY 2014 Plans:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals	443.919	431.847	354.715

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>
• 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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing

Remarks

D. Acquisition Strategy

The Ballistic Missile Defense System (BMDS) Test Program acquisition strategy is consistent with the Missile Defense Agency (MDA) capabilities-based acquisition strategy that emphasizes testing, evolutionary acquisition, and knowledge-based funding. Test directs a team of various internal staff (government and scientific, engineering and technical assistance support), executing agents (including DoD agencies, Service Organizations, Laboratories and Program Offices, Federally Funded Research and Development Center (FFRDC)), and other MDA programs to execute the various diverse efforts within the Ballistic Missile Defense System (BMDS) test program through competition. When a specific effort/activity being conducted, acquired, or maintained requires the use of an executing agent, the acquisition strategy conforming their respective headquarter regulations are used.

The MDA Integrated Master Test Plan (IMTP) establishes and documents the test requirements for the BMDS with the specific focus on collecting the data needed for the Verification, Validation, and Accreditation (VV&A) of the BMDS Models and Simulations (M&S). This paradigm uses critical factor analysis to drive test design, planning, and execution for accrediting M&S, which is used to validate and assess system performance. With this test approach, MDA will establish confidence that the M&S used to evaluate the BMDS represent real world behavior, thereby enabling simulation-based performance assessment to verify system functionality.

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</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			
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			
Program Planning and Operations - IMTP Planning and Data Management Tools	C/FP	None:AL	0.000	13.697		12.809	Nov 2012	10.434	Oct 2013	-		10.434	Continuing	Continuing	Continuing
Program Planning and Operations - Lab Analysis Infrastructure	MIPR	None:AL/CA	0.000	13.353		15.256	Nov 2012	12.456	Oct 2013	-		12.456	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency	MIPR	None:MD	0.000	15.130		15.510	Nov 2012	14.779	Oct 2013	-		14.779	Continuing	Continuing	Continuing
Program Planning and Operations - Test Functional Management Office	MIPR	None:MDA/MiDAESS/AL/VA/CO/MA	0.000	74.757		71.720	Nov 2012	70.537	Oct 2013	-		70.537	Continuing	Continuing	Continuing

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

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			
Flight Test - IMTP Flight Testing	MIPR	None:WSMR/AMCOM/SMDC/MARAD/PAX River/SPAWAR/AL/CA/HI	0.000	92.555		64.253	Nov 2012	47.240	Oct 2013	-		47.240	Continuing	Continuing	Continuing
Flight Test - Support to Flight Testing	C/CPAF	None:AL	0.000	23.852		22.144	Nov 2012	17.179	Oct 2013	-		17.179	Continuing	Continuing	Continuing
Flight Test - Target Launch Operations	MIPR	None:LM/WSMR/PMRF/HI/NSA/SMDC/RTS/MS/NAWC	0.000	0.000		0.000		5.502	Oct 2013	-		5.502	Continuing	Continuing	Continuing
Ground Test - IMTP Ground Testing	MIPR	None:AL/CO/CA	0.000	10.153		7.491	Nov 2012	12.110	Oct 2013	-		12.110	Continuing	Continuing	Continuing
Ground Test - Support to Ground Testing	C/CPAF	None:AL/CO	0.000	13.848		14.399	Nov 2012	9.410	Oct 2013	-		9.410	Continuing	Continuing	Continuing
Test Resources - Airborne Optics Mobile Assets	C/IDIQ	None:L3/JHU/APL/TX/MD/AZ/TN	0.000	21.249		22.605	Nov 2012	14.066	Oct 2013	-		14.066	Continuing	Continuing	Continuing
Test Resources - Core GT Communication Support	MIPR	None:SMDC/SPAWAR/AL/CA	0.000	3.770		3.830	Nov 2012	0.000		-		0.000	0.000	7.600	0.000
Test Resources - Core GT Labs and HWILS	C/IDIQ	None:Colsa/SMDC/SPAWAR/AMRDEC/AL/MD/FL/CA/OH/CO	0.000	37.147		38.524	Nov 2012	35.784	Oct 2013	-		35.784	Continuing	Continuing	Continuing
Test Resources - Current String	MIPR	None:SPAWAR/AMRDEC/AL/CA/NM/TN	0.000	6.500		12.100	Nov 2012	0.000		-		0.000	0.000	18.600	0.000
Test Resources - Enhanced GT Capability Assets	MIPR	SPAWAR/AMRDEC/AL/CA/NM/TN:Colsa/Boeing/NG/AL/CO/FL/MD/HI	0.000	0.000		0.000		6.100	Oct 2013	-		6.100	Continuing	Continuing	Continuing
Test Resources - Flight Test Improvements	MIPR	None:NAWC/MARAD/WSMR/CA/NCR/NM/MD	0.000	8.380		1.288	Nov 2012	0.000		-		0.000	0.000	9.668	0.000
Test Resources - Flight Test Instrumentation	C/IDIQ	None:Gray Research/NRL/	0.000	21.791		26.300	Nov 2012	16.727	Oct 2013	-		16.727	Continuing	Continuing	Continuing

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

Test and Evaluation (\$ 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
		NAWC/CA/MD/NCR/NM/AL/MA													
Test Resources - Flight Test Ranges	MIPR	None:NAWC/WSMR/AK/AL/CA/HI/NM/CO	0.000	16.123		18.490	Nov 2012	15.125	Oct 2013	-		15.125	Continuing	Continuing	Continuing
Test Resources - Sea Based Mobile Assets	MIPR	None:MARAD/NAWC/Hanscom AFB/SMDC/AL/CA/MD/NCR/NM/MA	0.000	13.562		23.752	Nov 2012	24.741	Oct 2013	-		24.741	Continuing	Continuing	Continuing
Test Resources - Second String	MIPR	None:Colsa/Boeing/NG/AL/CO	0.000	9.400		11.400	Nov 2012	0.000		-		0.000	0.000	20.800	0.000
Test Resources - Support to Test Resources	MIPR	None:MiDAESS/AL	0.000	11.250		10.968	Nov 2012	9.728	Oct 2013	-		9.728	Continuing	Continuing	Continuing
Engineering and Test Analysis - DEV IMTP Engineering	MIPR	None:SMDC/AL	0.000	11.528		15.304	Nov 2012	12.867		-		12.867	Continuing	Continuing	Continuing
Engineering and Test Analysis - Joint Analysis Team IMTP	MIPR	None:AL/VA	0.000	17.384		23.078	Nov 2012	19.403		-		19.403	Continuing	Continuing	Continuing
Engineering and Test Analysis - Threat Engineering	MIPR	None:NJ/CO/MD/VA	0.000	1.235		0.626	Nov 2012	0.527		-		0.527	Continuing	Continuing	Continuing
Fielding and Integration - Support Contracts	C/CPAF	None:Computer Sciences Corp./Falls Church, VA	0.000	7.255		0.000		0.000		-		0.000	0.000	7.255	0.000
Subtotal			0.000	443.919		431.847		354.715		0.000		354.715			

Remarks
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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

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	0.000	443.919		431.847		354.715		0.000		354.715				

Remarks
N/A

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</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
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	▲																											
FTP-05 (PATRIOT Intercept Flight Test)	▲																											
Arrow Flight Test - FY 2012		▲																										
GTx-04e (BMDS Focused Ground Test)			▲																									
Fast Eagle Increment 1				▲																								
FTM-16 E2a (Aegis Intercept Flight Test)					▲																							
FTM-18 (Aegis Intercept Flight Test)						▲																						
FTM-19 (Aegis Intercept Flight Test)							△																					
Fast Eagle Increment 1 (follow on)								▲																				
FTG-06b (GM Intercept Flight Test)									△																			
FTP-07 (PATRIOT Intercept Flight Test)										▲																		
FTP-06 (PATRIOT Intercept Flight Test)											▲																	
FTI-01 (FTO-01 Risk Reduction Flight Test)												▲																
GTD-04e EUCOM (BMDS Distributed Ground Test) OT													△															
Israeli Cooperative Intercept Flight Test - FY13																												
GTD-04e CENTCOM (BMDS Distributed Ground Test) OT																												
FTM-21 E3 (Aegis Intercept Flight Test) (Salvo)																												
FTM-21 E1 (Aegis Simulated Intercept Flight Test)																												
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												
FTM-21 E2 (Aegis Simulated Intercept Flight Test)																												
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test)																												
FTM-22 E2 (Aegis Intercept Flight Test)																												
GTD-04e NORTHCOM/PACOM (BMDS Distributed Ground Test) OT																												
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) OT																												
FTP-08 (PATRIOT Intercept Flight Test)																												
SCDPTV-01 (Aegis Flight Test)																												
FTX-20 (Aegis Simulated Intercept Flight Test)																												

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</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
GTD-04e Part 2 (BMDS Ground Test)																												
GTI-ISR-14 (BMDS Ground Test)								☆	☆																			
Israeli Cooperative Intercept Flight Test - FY 2014								☆	☆	☆	☆																	
FTX-18 (Aegis Simulated Intercept Flight Test)								△																				
FTX-19 (Aegis Simulated Intercept Flight Test)								△																				
GM CTV-02 (GM Non Intercept Flight Test)								△																				
AA CTV-01 (Aegis Ashore Flight Test)										△																		
Fast Event 1										△																		
Fast Event 2										△																		
FTM-23 (Aegis Intercept Flight Test)										△																		
GTX-06 (BMDS Ground Test)										☆	☆																	
FTG-09 (GM Intercept Flight Test)										△																		
FTM-24 (Aegis Intercept Flight Test)										△																		
GTI-06 Part 1 (BMDS Ground Test)										☆	☆																	
AA FTM-01 (Aegis Ashore Intercept Flight Test)											△																	
AA FTM-02 (Aegis Ashore Intercept Flight Test)											△																	
FTM-25 (Aegis Intercept Flight Test)											△																	
FTX-21 (Aegis SBT Simulated Intercept Flight Test)											△																	
FTM-26 (Aegis Intercept Flight Test)											△																	
Israeli Cooperative Intercept Flight Test - FY 2015												☆	☆	☆	☆													
SCDCTV-01 (Aegis Flight Test)													△															
GTD-06 Part 1 (BMDS Ground Test)													☆	☆														
FTX-22 (Cobra Dane Flight Test)													△															
FTT-11a (THAAD Intercept Flight Test)													△															
FTM-27 (Aegis Intercept Flight Test)													△															
GTI-06 Part 2 (BMDS Ground Test)													☆	☆														
FTG-11 (GM Intercept Flight Test) (Salvo)														△														
SCDCTV-02 (Aegis Flight Test)														△														
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)														△														
GTD-06 Part 2 (BMDS Ground Test)														☆	☆													

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</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
GTX-07a (BMDS Ground Test)																												
Israeli Cooperative Intercept Flight Test - FY 2016																✦	✦	✦										
GTI-07a (BMDS Ground Test)																✦	✦	✦										
SFTM-01 E2 (Aegis Intercept Flight Test)																	△											
FTX-23 (Aegis Flight Test)																	△											
SFTM-01 E1 (Aegis Simulated Intercept Flight Test)																	△											
FTG-15 (GM Intercept Flight Test)																	△											
GTD-07a Part 1 (BMDS Ground Test)																	✦	✦										
SFTM-02 (Aegis Intercept Flight Test)																		△										
FTX-24 (Aegis SBT Flight Test)																		△										
GTD-07a Part 2 (BMDS Ground Test)																		✦	✦									
Israeli Cooperative Intercept Flight Test - FY 2017																			✦	✦	✦	✦						
FTT-15 (THAAD Intercept Flight Test)																				△								
GTX-07b (BMDS Ground Test)																			✦	✦	✦							
FTM-28 (Aegis Intercept Flight Test)																				△								
FTG-13 (GM Intercept Flight Test)																					△							
GTI-07b (BMDS Ground Test)																					✦	✦	✦					
FTM-31 (Aegis Intercept Flight Test)																						△						
FTM-29 (Aegis Intercept Flight Test)																							△					
FTM-30 (Aegis Intercept Flight Test)																								△				
Israeli Cooperative Intercept Flight Test - FY 2018																								✦	✦	✦	✦	
GTD-07b Part 1 (BMDS Ground Test)																								✦	✦	✦	✦	
FTM-33 (Aegis Intercept Flight Test)																									△			
FTM-32 (Aegis Intercept Flight Test)																										△		
GTD-07b Part 2 (BMDS Ground Test)																									✦	✦		
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																											△	

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-12 (THAAD Intercept Flight Test) (IOT&E)	1	2012	1	2012
FTP-05 (PATRIOT Intercept Flight Test)	1	2012	1	2012
Arrow Flight Test - FY 2012	2	2012	2	2012
GTX-04e (BMDS Focused Ground Test)	2	2012	2	2012
Fast Eagle Increment 1	3	2012	3	2012
FTM-16 E2a (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-18 (Aegis Intercept Flight Test)	3	2012	3	2012
FTM-19 (Aegis Intercept Flight Test)	4	2012	4	2012
Fast Eagle Increment 1 (follow on)	4	2012	4	2012
FTG-06b (GM Intercept Flight Test)	4	2012	4	2012
FTP-07 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTP-06 (PATRIOT Intercept Flight Test)	4	2012	4	2012
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GTD-04e EUCOM (BMDS Distributed Ground Test) OT	1	2013	1	2013
Israeli Cooperative Intercept Flight Test - FY13	1	2013	4	2013
GTD-04e CENTCOM (BMDS Distributed Ground Test) OT	2	2013	2	2013
FTM-21 E3 (Aegis Intercept Flight Test) (Salvo)	3	2013	3	2013
FTM-21 E1 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	3	2013	3	2013
FTM-21 E2 (Aegis Simulated Intercept Flight Test)	3	2013	3	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test)	3	2013	3	2013
FTM-22 E2 (Aegis Intercept Flight Test)	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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-04e NORTHCOM/PACOM (BMDS Distributed Ground Test) OT	4	2013	4	2013
GTI-04e NORTHCOM/PACOM (BMDS Integrated HWIL Ground Test) OT	4	2013	4	2013
FTP-08 (PATRIOT Intercept Flight Test)	4	2013	4	2013
SCDPTV-01 (Aegis Flight Test)	1	2014	1	2014
FTX-20 (Aegis Simulated Intercept Flight Test)	1	2014	1	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2014
GTI-ISR-14 (BMDS Ground Test)	1	2014	4	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
FTX-18 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
FTX-19 (Aegis Simulated Intercept Flight Test)	2	2014	2	2014
GM CTV-02 (GM Non Intercept Flight Test)	2	2014	2	2014
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
Fast Event 1	3	2014	3	2014
Fast Event 2	3	2014	3	2014
FTM-23 (Aegis Intercept Flight Test)	3	2014	3	2014
GTX-06 (BMDS Ground Test)	3	2014	4	2014
FTG-09 (GM Intercept Flight Test)	4	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	4	2014	1	2015
AA FTM-01 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
AA FTM-02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
FTM-25 (Aegis Intercept Flight Test)	1	2015	1	2015
FTX-21 (Aegis SBT Simulated Intercept Flight Test)	1	2015	1	2015
FTM-26 (Aegis Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
SCDCTV-01 (Aegis Flight Test)	2	2015	2	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
FTM-27 (Aegis Intercept Flight Test)	3	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	3	2015	4	2015
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2015	4	2015
SCDCTV-02 (Aegis Flight Test)	4	2015	4	2015
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
GTD-06 Part 2 (BMDS Ground Test)	4	2015	1	2016
GTX-07a (BMDS Ground Test)	1	2016	3	2016
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
GTI-07a (BMDS Ground Test)	2	2016	4	2016
SFTM-01 E2 (Aegis Intercept Flight Test)	3	2016	3	2016
FTX-23 (Aegis Flight Test)	3	2016	3	2016
SFTM-01 E1 (Aegis Simulated Intercept 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
SFTM-02 (Aegis Intercept Flight Test)	1	2017	1	2017
FTX-24 (Aegis SBT Flight Test)	1	2017	1	2017
GTD-07a Part 2 (BMDS Ground Test)	1	2017	2	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
GTX-07b (BMDS Ground Test)	2	2017	4	2017
FTM-28 (Aegis Intercept Flight Test)	3	2017	3	2017

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MT04: <i>BMDS Test Program</i>
---	--	--

Events	Start		End	
	Quarter	Year	Quarter	Year
FTG-13 (GM Intercept Flight Test)	4	2017	4	2017
GTI-07b (BMDS Ground Test)	4	2017	2	2018
FTM-31 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-29 (Aegis Intercept Flight Test)	1	2018	1	2018
FTM-30 (Aegis Intercept Flight Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
GTD-07b Part 1 (BMDS Ground Test)	2	2018	4	2018
FTM-33 (Aegis Intercept Flight Test)	3	2018	3	2018
FTM-32 (Aegis Intercept Flight Test)	3	2018	3	2018
GTD-07b Part 2 (BMDS Ground Test)	3	2018	4	2018
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MC04: <i>Cyber Operations</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
MC04: <i>Cyber Operations</i>	-	0.000	0.000	0.500	-	0.500	0.514	0.523	0.532	0.546	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 MC01 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2014. Funds were previously reported in Project MT04 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 Ballistic Missile Defense Test program. 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 Cybersecurity 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	0.500
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: N/A			
FY 2014 Plans: - Fund Ballistic Missile Defense Test Program Information Assurance Manager (IAM) civilian salaries.			

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MC04: <i>Cyber Operations</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Conduct cyber security / information assurance engineering and architecture planning for DT information technology systems.			
- Plan and test the IA controls for Ballistic Missile Defense System.			
- Develop DT DIACAP certification and accreditation packages.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.500

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MC04: <i>Cyber Operations</i>
---	--	---

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			
Network / System Certification and Accreditation (C&A) - Information Assurance	C/IDIQ	Torch Technologies:Various	0.000	0.000		0.000		0.342	Nov 2013	-		0.342	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Information Assurance Civ	MIPR	MDA:Various	0.000	0.000		0.000		0.158	Oct 2013	-		0.158	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.500		0.000		0.500			

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	0.500	0.000	0.500			

Remarks
N/A

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development 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
MX04: <i>BMD Test Development Support</i>	-	33.758	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	33.758
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

For FY 2013, this transfers to Program Element 0603896C, Budget Project MX01.

A. Mission Description and Budget Item Justification

The Ballistic Missile Defense System (BMDS) Concurrent Test, Training, and Operations (CTTO) effort provides for comprehensive, in-place, geographically dispersed upgrades, testing, training, and sustainment while maintaining operational readiness across the complete BMDS Enterprise. This CTTO capability will enable simultaneous cross-element training events in the field during BMDS incremental and spiral development testing and sustained operational readiness conditions without degrading protection capability. The BMDS CTTO capability is formally documented as a requirement in the Prioritized Capabilities List (PCL) and Modifications Requirement List (MRL).

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

	FY 2012	FY 2013	FY 2014
Title: Concurrent Test, Training, and operations	33.758	0.000	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			
-Continued integration of element delivered implementations.			
-Monitored and coordinated the execution of Agency Modeling and Simulation (M&S) development efforts; key dependencies for the successful execution of Concurrent Test, Training, and Operations (CTTO).			
-Operated and sustained Distributed Multi-Echelon System (DMETS) training and exercise suites and associated hardware and software at 80 hours per week.			
-Continued providing BMD training events across the Unified Combatant Commands while maintaining the existing architecture.			
-Continued to upgrade Distributed Multi-Echelon System (DMETS) to mirror the deployed systems. Includes technical refresh.			
Expanded training enhancements (e.g., dynamic scenarios emulating enemy mobile launchers, constructive (manned) element simulations, and initial crew assessment tools) and cross mission training.			

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</i>
---	--	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Implemented and Deployed distributed regional training solutions.			
FY 2013 Plans: -For FY13, refer to PE0603896C, Budget Project MX01.			
FY 2014 Plans: N/A			
Accomplishments/Planned Programs Subtotals	33.758	0.000	0.000

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

Remarks

D. Acquisition Strategy

The Concurrent Test, Training, and Operations (CTTO) systems design and acquisition will follow the MDA's capability-based acquisition strategy that emphasizes fielding capabilities that address particular threats. The design and development of the Ballistic Missile Defense System (BMDS) CTTO capability is a collaborative effort. The government is the task manager to integrate the technical effort and manage the contracting efforts. The government, using existing competitively awarded contract structures, established a CTTO Project Office; determined BMDS CTTO requirements and standardization; determined BMDS Core Protocol and Standards; synchronized upgrades, technology insertion points, and BMDS Element level activities; training exercises and events and capabilities. The long term acquisition strategy is to normalize CTTO requirements into existing contract structures. The intent is to develop a fully capable CTTO capability that provides comprehensive, in-place, geographically dispersed test, training, and evaluation of the complete BMDS. The CTTO approach supports evolutionary development, continuously building upon demonstrated capabilities to advance the BMDS capabilities.

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</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			
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			
Concurrent Test, Training, and operations - Concurrent Test, Training and Operations DMETS	C/CPAF	Various:Various	0.000	8.309		0.000		0.000		-		0.000	0.000	8.309	0.000
Concurrent Test, Training, and operations - Concurrent Test, Training and Operations FFRDC	SS/FFP	MITRE:Various	0.000	0.648		0.000		0.000		-		0.000	0.000	0.648	0.000
Concurrent Test, Training, and operations - Concurrent Test, Training and Operations Test/ Training Enhancements	C/CPAF	Various:Various	0.000	24.801		0.000		0.000		-		0.000	0.000	24.801	0.000
Subtotal			0.000	33.758		0.000		0.000		0.000		0.000	0.000	33.758	0.000

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MX04: <i>BMD Test Development Support</i>
---	--	---

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			

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

	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	33.758	0.000	0.000	0.000	0.000	0.000	33.758	0.000

Remarks
N/A

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 0603914C: <i>Ballistic Missile Defense Test</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>	-	7.161	22.553	20.651	-	20.651	20.540	18.789	21.824	24.006	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

Beginning in FY2013, Program Wide Support transfers from Program Element 0603890C, Budget Project MD40.

Beginning in FY 2014, this reflects a proportional decrease as a result of decreases to BMD Test Program.

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		7.161	22.553	20.651
	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:				

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 0603914C: <i>Ballistic Missile Defense Test</i>	PROJECT MD40: <i>Program Wide Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	7.161	22.553	20.651

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 0603914C: <i>Ballistic Missile Defense Test</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	Allot	Various:Multi: AL, CA, CO, VA	0.000	0.000		0.000		1.902	Jun 2014	-		1.902	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AL, CA, CO, VA	0.000	7.161		22.553	Dec 2012	18.749	Dec 2013	-		18.749	Continuing	Continuing	Continuing
Subtotal			0.000	7.161		22.553		20.651		0.000		20.651			

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	7.161	22.553	20.651	0.000	20.651			

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0603915C: <i>Ballistic Missile Defense Targets</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	-	497.550	435.747	495.257	-	495.257	516.092	406.611	481.527	463.660	Continuing	Continuing
MT05: <i>BMDS Targets Program</i>	-	497.550	414.696	468.713	-	468.713	490.430	385.732	454.847	437.866	Continuing	Continuing
MD40: <i>Program Wide Support</i>	-	0.000	21.051	26.544	-	26.544	25.662	20.879	26.680	25.794	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

N/A

A. Mission Description and Budget Item Justification

The BMDS Targets Program Element (PE) 0603915C (transferred from PE 0603888C) includes the Targets Program and, beginning in FY 2013, a portion of Program-Wide Support.

As part of the total Ballistic Missile Defense System (BMDS), the BMDS Targets Program provides centrally managed targets and countermeasures development and procurement for a cost effective, integrated system-level test approach. The BMDS Targets Program has realized past and future savings by centralized competition and management of targets and countermeasures using efficient acquisition strategies and lot buys resulting in economies of scale and cost savings. Based on the systems engineering assessments of threat intelligence, the BMDS Program Element develops, builds, and supports the launch of Short Range Ballistic Missile (SRBM: Less than 100Km range) targets, Medium Range Ballistic Missile (MRBM: 1000-3000 Km Range) targets, Intermediate Range Ballistic Missile (IRBM: 3000-5500 Km Range) targets, Intercontinental Ballistic Missile (ICBM: Greater than 5500 km range) targets, and Multi-Class Components to test, verify, and validate the performance of the BMDS against feasible threat signatures. The Missile Defense Agency (MDA) BMDS Targets Program provides an economical and reliable inventory of targets which are representative of feasible future threats and demonstrate capability of the evolving layered missile defense system in a simultaneous test and operations threat environment.

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).

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 0603915C: <i>Ballistic Missile Defense Targets</i>
---	---

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	454.357	435.747	475.175	-	475.175
Current President's Budget	497.550	435.747	495.257	-	495.257
Total Adjustments	43.193	0.000	20.082	-	20.082
• 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	43.193	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	20.082	-	20.082

Change Summary Explanation

FY 2014 funding was realigned from Program Element 0603914C to fully fund modified requirements of Integrated Master Test Plan based on fact-of-life adjustments to Missile Defense Agency's test program.

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</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
MT05: <i>BMDS Targets Program</i>	-	497.550	414.696	468.713	-	468.713	490.430	385.732	454.847	437.866	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

All Budget Project MT05 funds support BMDS-Level Testing.

A. Mission Description and Budget Item Justification

The mission of the Missile Defense Agency (MDA) BMDS Targets program is to provide an economical and reliable inventory of targets that are representative of feasible future threats. These targets enable demonstration of the evolving layered missile defense system capability in operationally realistic scenarios. The BMDS Targets Program develops and acquires three target types across four target classes. The four target classes include: Short Range Ballistic Missiles (SRBM), Medium Range Ballistic Missiles (MRBM), Intermediate Range Ballistic Missiles (IRBM), and Intercontinental Ballistic Missiles (ICBM). The target types (Type 1-3) designate the complexity of the target within its class. Type-1 targets are simple baseline configurations. Type-2 targets have increased capability or complexity. Type-3 targets have unique configurations.

The BMDS Targets Program develops and provides Multi-Class Components that can be used across the spectrum of target types and classes. The BMDS Targets Program provides target digital models that enable MDA weapon system program offices to simulate end to end sensor and interceptor performance during pre-mission analysis. The BMDS Targets Program also provides maintenance, aging surveillance, refurbishment, and routine testing of government furnished equipment boosters and target components. Target requirements are derived from the Critical Engagement Conditions (CECs) and Empirical Measurement Events (EMEs) that are documented in the Agency's Integrated Master Test Plan. The BMDS Targets Program develops and builds targets and countermeasures at multiple locations including: Courtland, AL; Orlando, FL; Chandler, AZ; and Albuquerque, NM. Storage and maintenance facilities are also located throughout the country including: Huntsville, AL; White Sands, NM; Ogden, UT; Camp Navajo, AZ; Hawthorne, NV; Tooele, UT; Courtland, AL; and Kodiak, AK.

The BMDS Targets Program consists of three major areas: Target Hardware, Program Operations, and Target Support.

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

	FY 2012	FY 2013	FY 2014
Title: Target Hardware	376.613	281.356	367.057
Articles:	0	0	0
Description: Target Hardware includes the development and manufacturing of target hardware. The BMDS Targets Program delivers fully assembled and integrated targets to BMDS Test Program, who executes target launch operations.			

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Target development includes the non-recurring engineering (NRE) for all four target classes, Multi-Class Components (associated objects and reentry vehicles), and ground support systems that support BMDS flight testing. Target development provides air, sea, and ground launch capabilities to maximize flexibility in MDA test design. Development activities include requirements decomposition, design, modeling and simulation, qualification testing, and characterization. The BMDS Targets Program Office manages target configuration, component interface specifications, range integration, reliability, mission assurance, and costs. Through the development program, BMDS Targets Program ensures target designs are producible, reliable, and affordable.</p> <p>Target hardware manufacturing includes the build of targets and target components that are required to execute the Missile Defense Agency (MDA) Integrated Master Test Plan (IMTP). Manufacturing includes government furnished equipment and new component acquisition, assembly, and integration. Also included are target characterization, quality and mission assurance, transportation, and logistics support. Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p> <p><i>FY 2012 Accomplishments:</i> Short Range Ballistic Missiles (SRBM):</p> <ul style="list-style-type: none"> -Medium Range Target (MRT) Ground - Delivered Ship Set 10 to support FTT-12 (THAAD Intercept Flight Test) -Aegis Readiness Assessment Vehicle-C (ARAV-C) - Delivered Ship Set 1 to support FTM-19 (Aegis Intercept Flight Test) ;continued development of Ship Sets 4-5 to support pre-ship readiness reviews in FY 2013 and FY 2014, respectively -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Delivered Ship Set 10 to support FTI-01 (FTO-01 Risk Reduction Flight Test); initiated development of Ship Sets 11-13, 16, and 17 to support future flight test requirements -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Delivered Ship Set 8 to support FTM-16 E2a (Aegis Intercept Flight Test) and Ship Set 9 to support FY 2013 flight test; initiated development of Ship Sets 10-12 to support pre-ship readiness review in FY 2013 -Foreign Materiel Acquisition-1 (FMA-1) - Delivered Ship Set 10 to support FTM-18 (Aegis Intercept Flight Test) -Foreign Materiel Acquisition-2 (FMA-2) - Delivered Ship Set 3 to support FTT-12 (THAAD Intercept Flight Test) -Continued development of all other SRBMs in support of the current IMTP <p>Medium Range Ballistic Missile (MRBM):</p> <ul style="list-style-type: none"> -Extended Medium Range Ballistic Missile (eMRBM) - Continued development of Ship Set 1 to support pre-ship readiness review in FY 2013; initiated development of Ship Sets 2-5 to support future flight test requirements -Extended Long Range Air Launch Target (ELRALT) - Delivered Ship Set 1 to support FTI-01 (FTO-01 Risk Reduction Flight Test); continued development of Ship Set 2 to support future flight test requirements 			

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 0603915C: <i>Ballistic Missile Defense Targets</i>		PROJECT MT05: <i>BMDs Targets Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<p>-MRBM Type 3 (MRBM T3) - Continued development of Ship Set 1 to support pre-ship readiness review in FY 2014; initiated development of Ship Sets 2-4 to support future flight test requirements -Continued development of all other MRBMs in support of the current IMTP</p> <p>Intermediate Range Ballistic Missile (IRBM):</p> <p>-Launch Vehicle 2 (LV-2) - Continued development of Ship Set 4 to include qualification testing to support pre-ship readiness review in FY 2013 -IRBM T1/T2 - Continued development of Ship Sets 1 thru 6 to support future flight test requirements -Continued development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Intercontinental Ballistic Missile (ICBM):</p> <p>-Initiated development of Ship Set 1 to include target development efforts that provided for the non-recurring engineering (NRE) to support BMDs flight testing</p> <p>Multi-Class Components:</p> <p>-Continued development of Modified Ballistic Re-Entry Vehicle-5 (MBRV-5) to include build of the Attitude Control Module (ACM) to support planned FY 2014 production unit deliveries -Continued development of MBRV-7 to include build of the separation system to support planned deliveries of Extended Medium Range Ballistic Missile Ship Sets 1 and 2 in FY 2013 -Continued development of MBRV-8 to include completion of the Re-Entry Vehicle Separation Module (RVSM) to support initial delivery in FY 2013 -Continued development of Associated Object packages to support requirements of the Integrated Master Test Plan -Continued other Counter Measures/Associated Objects Non-Recurring Engineering that included the United Kingdom Project Agreement -Continued development of all other re-entry vehicles, associated objects, and motors in support of the current Integrated Master Test Plan</p> <p>FY 2013 Plans: Target requirements are delineated in the Missile Defense Agency (MDA) Integrated Master Test Plan (IMTP). Future revisions to the IMTP will likely affect target types and quantities noted in the Planned Accomplishments.</p>				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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>Multi-Class Components: Develop, build, and support common payloads and components, re-entry vehicles, booster motors, and associated objects to support the manufacturing of targets for SRBM, MRBM, IRBM, and ICBM. Specifically, the funds are used for non-recurring engineering (NRE) and recurring engineering to:</p> <ul style="list-style-type: none"> -Initiate/continue development and delivery of Modified Ballistic Re-Entry Vehicle-2 (MBRV-2) -Initiate/continue development and delivery of MBRV-5 -Initiate/continue development and delivery of MBRV-7 -Initiate/continue development and delivery of MBRV-8 -Initiate/continue development and delivery of Attitude Control Module (ACM) -Counter Measures/Associated Objects Non-Recurring Engineering to include Objects for Intermediate Range Ballistic Missile (IRBM) target, and the United Kingdom Project Agreement -Initiate/ continue development of all other Re-entry Vehicles, Associated Objects, and Motors in support of the current Integrated Master Test Plan. <p>Intermediate Range Ballistic Missile (IRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of IRBM launch vehicles to support BMDs flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the intermediate range ballistic missile threat and capabilities.</p> <ul style="list-style-type: none"> -IRBM T1/T2 - Initiate/continue development of Ship Sets 1 thru 16 -Initiate/continue development of all other IRBMs in support of the current Integrated Master Test Plan (IMTP) <p>Medium Range Ballistic Missile (MRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of MRBM launch vehicles to support BMDs flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the medium range ballistic missile threat and capabilities.</p> <ul style="list-style-type: none"> -Extended Medium Range Ballistic Missile (eMRBM) - Initiate/continue development of Ship Sets 1-5 -Extended Long Range Air Launch Target (E-LRALT) - Initiate/continue development of Ship Set 2 -MRBM Type 3 (MRBM T3) - Initiate/continue development of Ship Sets 1-4 -Initiate/continue development of all other MRBMs in support of the current Integrated Master Test Plan (IMTP) <p>Short Range Ballistic Missiles (SRBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) and recurring development of SRBM launch vehicles to support BMDs flight testing. Efforts include requirements decomposition, design, qualification testing, characterization, and build. This supports the MDA objective to demonstrate the short range ballistic missile threat and capabilities.</p> <ul style="list-style-type: none"> -Short Range Air-Launched Target (SRALT) - Initiate/continue development of Ship Set 3 			

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>-Aegis Readiness Assessment Vehicle-C (ARAV-C) - Initiate/continue development of Ship Sets 4-6 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - Initiate/continue development of Ship Sets 9, 11-15 -Aegis Readiness Assessment Vehicle-A (ARAV-A) - Initiate/continue development of Ship Sets 10-12 -Foreign Materiel Acquisition-1 (FMA-1) - Initiate/continue development of Ship Set 12 -Strypi - Initiate/continue development of Ship Set 1 -Initiate/continue development of all other SRBMs in support of the current Integrated Master Test Plan (IMTP)</p> <p>Intercontinental Ballistic Missile (ICBM): Specifically, target development efforts provide for the non-recurring engineering (NRE) to support BMDs flight testing.</p> <p>Variance Analysis: FY 2013 budget decreases from FY 2012 due to decrease in non-recurring engineering costs and long-lead hardware procurement associated with Intermediate Range Ballistic Missile targets, Medium Range Ballistic Missile targets, and common components.</p> <p>FY 2014 Plans: Short Range Ballistic Missiles (SRBM):</p> <p>-Aegis Readiness Assessment Vehicle-C (ARAV-C) - deliver Ship Sets 6 and 7 to include initiation of the Attitude Control Module (ACM) build (18 month long-lead item) to support pre-ship readiness reviews in FY 2016 -Aegis Readiness Assessment Vehicle-B (ARAV-B) - deliver Ship Set 14 to support pre-ship readiness review in FY 2014, and continue manufacture of Ship Set 15 to include motor certification and mission design review to support pre-ship readiness review FY 2016 -Foreign Materiel Acquisition-1 (FMA-1) - continue modification of Ship Set 12 to include instrumentation qualification and cable runs to support pre-ship readiness review in FY 2015 -Continue development and manufacture of all other SRBMs in support of the current Integrated Master Test Plan</p> <p>Medium Range Ballistic Missile (MRBM):</p> <p>-Extended Medium Range Ballistic Missile (eMRBM) - deliver Ship Set 3 to include completion of Assembly, Integration and Test (AI&T) to support pre-ship readiness review in FY 2014, complete modules for Ship Set 4 to support pre-ship readiness review in FY 2015, and complete modules for Ship Set 5 to support pre-ship readiness review in FY 2016 -MRBM Type 3 (MRBM T3) - deliver Ship Sets 1-3 to include AI&T to support pre-ship readiness reviews in FY 2014, continue development of Ship Set 4 to include qualification testing to support pre-ship readiness review in FY 2015</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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>-MRBM T1/T2 - continue development of Ship Sets 1-2 to include qualification testing to support pre-ship readiness reviews in FY 2015, and continue development of Ship Sets 3-7 to include acquisition of long-lead items to support pre-ship readiness reviews in FY 2016</p> <p>-Continue development of all other MRBMs in support of the current Integrated Master Test Plan</p> <p>Intermediate Range Ballistic Missile (IRBM):</p> <p>-IRBM T1/T2 - deliver Ship Sets 1-4 to include qualification testing and AI&T to support pre-ship readiness reviews in FY 2014, continue manufacture of Ship Sets 5-12 and deliver booster hardware to inventory to support the IMTP</p> <p>-Continue development of all other IRBMs in support of the current Integrated Master Test Plan</p> <p>Intercontinental Ballistic Missile (ICBM):</p> <p>-Begin integration of the ICBM Ground Test Missile used as a pathfinder for the Concept of Operations</p> <p>-Develop and initiate AI&T for Ship Set 1 to complete in FY 2015</p> <p>Multi-Class Components:</p> <p>-Deliver final Modified Ballistic Re-Entry Vehicle-2 (MBRV-2)</p> <p>-Continue development and delivery of MBRV-5 to include build of Integrated Electronics Module (IEM) and aeroshells with planned threat representative demo performance in FY 2014</p> <p>-Continue development of MBRV-7 to include build of IEM and aeroshells with deliveries planned for FY 2014 to support Extended Medium Range Ballistic Missile Ship Sets 3 and 4</p> <p>-Continue development and delivery of MBRV-8 with planned pre-ship readiness review in FY 2014</p> <p>-Continue Associated Object (AO) Type 2 development with initial delivery and pre-ship readiness review in FY 2014 to support IRBM T1/T2 Ship Set 1</p> <p>-Continue Counter Measures/Associated Objects Non-Recurring Engineering to include the United Kingdom Project Agreement</p> <p>-Continue development of all other Re-entry Vehicles, Associated Objects, and Motors in support of the current Integrated Master Test Plan.</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 0603915C: <i>Ballistic Missile Defense Targets</i>		PROJECT MT05: <i>BMDS Targets Program</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
Increases due to non-recurring engineering and long-lead hardware purchases associated with Short Range Ballistic Missile targets and Medium Range Ballistic Missile targets.				
Title: Program Operations		59.019	59.840	62.844
		Articles: 0	0	0
<p>Description: Program Operations provides for government management of the Targets program. Included in this effort is program and business management, program administration, technical and testing oversight, verification of hardware and software development, quality/safety/mission assurance, integrated logistics support, and government manpower and infrastructure to develop, test and sustain the BMDS Targets Program Office system and components.</p> <p>FY 2012 Accomplishments:</p> <ul style="list-style-type: none"> -Provided technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities -Provided program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight -Ensured Targets and Countermeasures program compliance with internal and external direction, policies, and regulations -Conducted Internal Baseline Reviews that align with the Missile Defense Agency (MDA) approved baselines -Continued a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, Security, and Safety -Provided Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered for BMDS test events <p>FY 2013 Plans:</p> <p>Program Operations consist of the government, contractor and Federally Funded Research and Development Center (FFRDC) workforce that manages the overall Targets and Countermeasures (TC) program, to include competition of new MRBM contracts, engineering, logistics, program management, business management, acquisition, contract administration, and quality assurance. The personnel for TC enable the program to develop, build, and evaluate targets that respond to the changing threat and meet the requirements in the Integrated Master Test Plan. These personnel include the following:</p> <ul style="list-style-type: none"> -MDA Civilians in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality and Mission Assurance; Security; and Test -Other Government Agency (OGA) Civilians to provide support in the following functional areas: Business and Financial Management; Engineering; Logistics; Safety, Quality, and Mission Assurance; and Security -Travel for Government Civilians 				

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-Missile Defense Agency Engineering and Support Services (MiDAESS) contractor support in the following functional areas: Acquisition Management; Business and Financial Management; Contracts; Administrative Services; Engineering; Readiness; Safety, Quality, and Mission Assurance; Security; and Test</p> <p>-FFRDCs, Intergovernmental Personnel Act (IPAs), University Affiliated Research Center (UARC) staff, Detailees, and Liaisons to support the TC program office in Engineering</p> <p>-Operations support to include Change of Station requirements and Student Loan Repayments</p> <p>FY 2014 Plans:</p> <p>-Provide technical and business management support activities, financial management, cost and schedule performance analysis cost estimation and analysis, configuration management and integration activities</p> <p>-Provide program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight</p> <p>-Ensure Targets and Countermeasures program compliance with internal and external direction, policies, and regulations</p> <p>-Conduct Internal Baseline Reviews that align with the Missile Defense Agency (MDA) approved baselines</p> <p>-Continue a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, Security, and Safety</p> <p>-Provide Quality Safety and Mission Assurance operations to ensure compliance with Agency requirements for design, test, manufacturing, quality, safety and reliability to ensure high quality products are delivered for BMDS test events</p>				
Title: Target Support		61.918	73.500	38.812
		Articles: 0	0	0
<p>Description: BMDS Target Program Support consists of two sub-elements. These are Systems Engineering/Program Management and Logistics.</p> <p>System engineering/program management provides target program technical direction to meet program requirements while balancing cost, schedule, performance, and risk. It conducts functional requirements allocation to product lines, defines product line specifications/interfaces, and follows guidelines for design reviews. It performs target system analysis to verify system performance, defines target program baselines, controls flight test configurations, and conducts pre and post-flight analysis. It identifies treaty and environmental issues and develops plans for issue resolution. It also includes Single Stimulation Framework (SSF)/Objective Stimulation Framework (OSF) compatible Modeling and Simulation execution and improvements to evolve TC Modeling and Simulation capability; trajectory analyses; signature analyses and characterization; studies to assess alternative target and platform solutions; assessments of risk and mission assurance; and design approval of government furnished equipment.</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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

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

	FY 2012	FY 2013	FY 2014
<p>BMDS Targets Program logistics support provides the Missile Defense Agency (MDA) with target storage, aging surveillance, and transportation of TC hardware in support of BMDS testing. Also included are integrated logistics support for facilities, inventory maintenance, spare parts, aging surveillance, disposal, special testing for rocket motor propellants, and other hazardous material handling. This task manages and oversees accountability of all government furnished equipment and contractor acquired property. Logistics also provides common support equipment for launch vehicles, re-entry vehicles, associated objects, and all up integrated target rounds. It also supports launch site activations through the transportation of support equipment to various test sites.</p> <p><i>FY 2012 Accomplishments:</i> System Engineering and Program Management: Performed program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <ul style="list-style-type: none"> -Continued Program Management and Business Operations for target components to provide a framework for the overall management of the Targets program -Continued Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements -Continued Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program -Continued Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success -Continued information technology and classified network support to ensure sensitive target information is not compromised -Continued Software Independent Verification and Validation (IV&V) for targets including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile (IRBM), and Medium Range Ballistic Missile Type 3 (MRBM T3) to provide risk reduction of flight missions -Continued MDA Engineering Directorate to ensure targets are representative of feasible future threats -Performed prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests <p>Logistics:</p> <ul style="list-style-type: none"> -Continued C4 Motors storage, disposal, transportation, aging surveillance, and static fire support in order to sustain Launch Vehicle-2 (LV-2) -Continued Castor IVB sustainment and storage costs in order to support Medium Range Targets (MRT) -Continued Lance Missile sustainment, telemetry van sustainment and facilities sustainment costs 			

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Continued Orbus 1A missile sustainment support to maintain the capability to build Extended Long Range Air Launch Targets (E-LRALT)</p> <p>-Continued Minuteman Motors storage, disposal, transportation, aging surveillance, and static fire costs in order to maintain the capability to build Extended Medium Range Ballistic Missile (eMRBM) and MRBM Type 3 targets</p> <p>-Continued Multi-Class Inventory storage, aging surveillance, and transportation support to ensure availability of Re-entry Vehicles (RVs) and ground support equipment</p> <p>-Continued Multi-Class Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification costs</p> <p>-Continued Castor IVA, GEM-40, and M-57 motor storage, transportation, and disposal</p> <p>-Initiated modification to expand the missile assembly building at Courtland, Alabama</p> <p>FY 2013 Plans:</p> <p>System Engineering and Program Management: Perform program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests.</p> <p>-Continue Program Management and Business Operations for target components to provide a framework for overall management of the Targets program</p> <p>-Continue Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements</p> <p>-Continue Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program</p> <p>-Continue Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continue information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-Continue Software Independent Verification and Validation (IV&V) for targets, including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile (IRBM), and Medium Range Ballistic Missile Type 3 (MRBM T3), to provide risk reduction of flight missions</p> <p>-Continue MDA Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat</p> <p>-Perform prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests</p> <p>Logistics and Sustainment: Provides maintenance, transportation, utilities, storage, license fees, aging surveillance, disposal and material handling for targets, target components, re-entry rebuilds, associated objects, and support equipment. Targets and Countermeasures utilizes storage to acquire and preserve existing booster motors and other target hardware from DoD inventory to build future targets with existing, flight qualified components, which help reduce future development and manufacturing costs to include:</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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<p>-C4 Motors - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Castor IVA - Storage support</p> <p>-Castor IVB - Storage support</p> <p>-M-57 - Storage, disposal, transportation, and aging surveillance support</p> <p>-Orbus 1A - Missile sustainment support</p> <p>-SR-19 - Storage, disposal, transportation, aging surveillance, and static fire support</p> <p>-Multi-Class Inventory storage, aging surveillance, and transportation support</p> <p>-Multi-Class Other - Vehicle support, ordnance inventory reduction planning, small ordnance, x-ray, refurbishment, transportation, and modification support</p> <p>-Complete modification to expand the missile assembly building at Courtland, Alabama</p> <p>Variance Analysis: FY 2013 budget increases from FY 2012 due to \$17.9 million of FY 2012 funds being executed in Budget Project MD05 in Program Element 0603888C.</p> <p>FY 2014 Plans:</p> <p>System Engineering and Program Management:</p> <p>-Continue Program Management and Business Operations for target components to provide a framework for overall management of the Targets program</p> <p>-Continue Information Technology support for Other Government Agencies (OGAs) so that subject matter experts can be used to support Target requirements</p> <p>-Continue Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure representative of feasible future threats; technology is being incorporated into the Targets program</p> <p>-Continue Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continue information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-Continue Software Independent Verification and Validation (IV&V) for targets, including the Extended Medium Range Ballistic Missile (eMRBM), Launch Vehicle-2 (LV-2), Air-Launched Intermediate Range Ballistic Missile (IRBM), Medium Range Ballistic Missile Type 1 and Type 2 (MRBM T1/T2), and Medium Range Ballistic Missile Type 3 (MRBM T3), to provide risk reduction of flight missions</p> <p>-Continue MDA Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat</p> <p>-Perform prime contractor program management and systems engineering functions including: specialty and production engineering; acquisition, production, logistics management; modeling and simulation; and tests</p> <p>Logistics:</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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p>-Continue C4 Motors storage, disposal, transportation, aging surveillance, and static fire support in order to sustain Launch Vehicle-2 (LV-2)</p> <p>-Continue Minuteman Motors storage, transportation, aging surveillance, technical expertise, and static fire support to maintain the capability to build Extended Medium Range Ballistic Missile (eMRBM) and MRBM Type 3 targets</p> <p>-Continue Multi-Class Inventory storage, aging surveillance, and transportation support to ensure availability of Re-entry Vehicles (RVs) and ground support equipment</p> <p>-Continue modifications to expand missile assembly buildings in support of target integration operations</p> <p>Variance Analysis: Decreases due to decreased target types, disposal, and storage efficiencies in support of the Integrated Master Test Plan.</p>			
Accomplishments/Planned Programs Subtotals	497.550	414.696	468.713

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
• 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

Remarks

D. Acquisition Strategy

The Missile Defense Agency (MDA) BMDS Targets Program provides for the development and purchase of ballistic missile targets and countermeasures for the Ballistic Missile Defense System in support of the Missile Defense Agency's flight test program. The BMDS Targets Program requirements are derived from the Agency's Integrated Master Test Plan (IMTP).

Based on the Acquisition Plan for MDA's Prime Contract, MDA BMDS Targets Program competed and awarded a prime contract to Lockheed Martin Space Systems Company (LMSSC) on 9 December, 2003 for the development of the Flexible Target Family (FTF). Short Range Ballistic Missile targets, Medium Range Ballistic Missile targets, and Intermediate Range Ballistic Missile targets, as well as reentry vehicles are procured using this contract.

Since the award of this base contract, MDA BMDS Targets Program has refined its acquisition strategies and signed new contracts to improve on this baseline.

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</i>
---	---	---

Based on the MDA BMDs Targets Program Medium Range Targets (MRT) Acquisition Plan, the MDA BMDs Targets Program awarded a sole source firm fixed price contract to the Orbital Sciences Corporation ground launched Medium Range Target/Re-Entry Vehicle (MRT/RV) targets in June 2008. This award was based upon the requirement for target consistency resulting in a unique target/RV configuration to support testing of the Aegis Weapon System. A total of three targets were procured on this contract.

Based on MDA`s Acquisition Plan (3 November 2009), MDA BMDs Targets Program competitively awarded a prime contract to Orbital Sciences Corporation on 7 March 2011 for the design and development (cost plus award fee) and delivery (fixed-price incentive fee) of eight air-launched Intermediate Range Ballistic Missile (IRBM) targets. This award includes two follow-on options; one for eight IRBM targets and one for one to six IRBM targets.

The Sounding Rocket Program 3 (SRP-3) contract is managed by the US Air Force Space and Missile Systems Center, Space Development and Test Directorate at Kirtland AFB, NM to provide air launched target systems. The SRP-3 contract has 4 prequalified vendors (Orbital Sciences Corp, Alliant Tech Systems, L-3 Communications/Coleman Aerospace (Coleman), and Space Vector Corp) that are able to compete for new task orders to develop targets on this contract. To date, Coleman is the only vendor that has been awarded task orders on this contract.

The Solid Rocket Motor Technical Services Contract was competitively awarded to Alliant Tech Systems in May 2005 and provides aging and surveillance, refurbishment, transportation, testing, and sensitivity studies for MDA BMDs Targets Program solid rocket motors to include A3, C4, Orbus 1/1A, GEM, and Castor IV variants. A follow-on sole source contract was awarded 30 September 2011.

The Aegis Readiness Assessment Vehicle (ARAV) target effort is managed by MDA BMDs Targets Program and the Naval Surface Warfare Center Port Hueneme Division White Sands (NSWC PHD WS). NSWC PHD WS has unique sounding rocket expertise and access to existing contracts managed by White Sands Missile Range that makes this a beneficial relationship for both parties. MDA BMDs Targets Program provides targets funding via Military Interdepartmental Purchase Orders that NSWC PHD WS expends on its hardware development and engineering contracts. In addition, MDA BMDs Targets Program provides funding to Sandia National Labs in support of the Attitude Control Module (ACM) development effort for the ARAV Group C target. NSWC PHD WS manages the integration of the ACM onto the launch vehicle. The MDA BMDs Test Program (Program Element 0603914C) is responsible for funding all launch services of these targets in support of the (Integrated Master Test Plan) IMTP.

MDA BMDs Targets Program is currently in various stages of planning or execution for procurement of ballistic missile targets by range class: Short Range (SRBM), Medium Range (MRBM), Intermediate Range (IRBM), and Intercontinental Range (ICBM). These targets will be procured using a Target Performance Specification to support flight test requirements as identified in the Integrated Master Test Plan. Each target class will be solicited, evaluated, and competitively awarded independently in IMTP ``need date`` priority order.

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
<p>Within each target class, capabilities are further segregated and designated as a class type. Type 1, Type 2, and Type 3 capabilities are defined as follows:</p> <p>Type 1: A Type 1 target is the baseline (simple) configuration for the class. A Type 1 target satisfies the minimum target requirements to provide the baseline capability for each target class. The baseline configuration represents the complete vehicle stack-up and includes: 1-n boosters, attitude control system, test object, flight termination system, housekeeping and environmental instrumentation, and telemetry. For example, the basic configuration of an LV-2 target is representative of a Type 1 configuration in the intermediate range class.</p> <p>Type 2: A Type 2 target requires more advanced or complex performance capabilities. Type 2 capabilities may be included in the baseline Type 1 configuration or provided as configuration kits that can be added to the baseline configuration. Type 2 kits may include the following: countermeasures and associated deployment capability, enhanced targeting and aim point accuracies, selectable booster and test object dynamics, tailored separation debris, temperature sensors, hit location and miss distance instrumentation, onboard sensors, deployable fly along sensors, and/or lethality payloads. For example, the LV-2 target with countermeasures or additional payloads is representative of a Type 2 configuration in the intermediate range class.</p> <p>Type 3: A Type 3 target is a unique configuration procured in low unit quantities. Type 3 targets encompass unique threat characteristics or test conditions (i.e. Ground Based Midcourse Defense high velocity engagement scenario) not achievable with a Type 1 or Type 2 configuration.</p> <p>BMDS Targets Program is in the process of transitioning from a ``just-in-time`` approach to delivering unique targets to meet specific flight test requirements to more of a production based strategy geared towards building an inventory of product lines able to meet multiple test requirements at substantially lower costs. Work under existing contracts/orders will run to completion rather than being transitioned to a new contractor(s).</p> <p>Future targets may be procured under the new acquisition competitive Request for Proposals unless the new acquisitions would result in higher cost, delivery delays, or less capable targets. MDA BMDS Targets Program will procure pre and post mission planning, data products, support to modeling and simulation and ground test, inventory sustainment and management, and flight test execution.</p> <p>E. Performance Metrics N/A</p>		

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</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			
Target Hardware - Target Hardware/ICBM - 1	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	6.347		9.718	Nov 2012	21.408	Nov 2013	-		21.408	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 1	C/CPAF	Lockheed Martin Space Systems Company:Courland, AL	0.000	11.916		0.000		4.000	Nov 2013	-		4.000	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	94.105		71.679	Nov 2012	72.987	Nov 2013	-		72.987	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 3	C/CPIF	Lockheed Martin Space Systems Company:Courland, AL	0.000	2.262		0.000		0.000		-		0.000	2.262	4.524	2.262
Target Hardware - Target Hardware/IRBM - 4	C/FFP	Orbital Sciences Corporation:Chandler, AZ	0.000	0.916		2.250	Nov 2012	0.000		-		0.000	0.000	3.166	0.000
Target Hardware - Target Hardware/IRBM - 5	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	0.000	0.896		0.837	Nov 2012	0.000		-		0.000	0.000	1.733	0.000
Target Hardware - Target Hardware/MRBM - 1	C/CPAF	Lockheed Martin Space Systems Company:Courland, AL	0.000	65.831		97.043	Nov 2012	97.655	Nov 2013	-		97.655	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/MRBM - 2	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	62.142		11.544	Nov 2012	30.609	Nov 2013	-		30.609	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/MRBM - 3	C/CPIF	L3 Communications/ Coleman Aerospace:Orlando, FL	0.000	28.782		0.000		0.751	Nov 2013	-		0.751	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/MRBM - 4	C/CPIF	Orbital Sciences Corporation:Chandler, AZ	0.000	1.968		0.000		0.000		-		0.000	1.968	3.936	1.968

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</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			
Target Hardware - Target Hardware/MRBM - 5	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	0.000	0.560		0.000		0.000		-		0.000	0.560	1.120	0.560
Target Hardware - Target Hardware/MRBM - 6	C/FFP/LOE	MRBM T3 RFP:TBD	0.000	0.000		0.641	Mar 2013	0.000		-		0.000	0.000	0.641	0.000
Target Hardware - Target Hardware/MRBM-7	C/CPAF	MRBM T1/T2 RFP:TBD	0.000	0.000		0.000		28.816	Nov 2013	-		28.816	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 1	C/CPAF	Lockheed Martin Space Systems Company:Courtlund, AL	0.000	51.697		61.073	Nov 2012	54.947	Nov 2013	-		54.947	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 2	C/CPAF	Lockheed Martin Space Systems Company:United Kingdom	0.000	2.780		3.367	Nov 2012	3.228	Nov 2013	-		3.228	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 3	C/CPIF	Lockheed Martin Space Systems Company:Courtlund, AL	0.000	2.786		0.000		0.000		-		0.000	2.786	5.572	2.786
Target Hardware - Target Hardware/Multi-Class Components - 4	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	0.000		7.603	Nov 2012	0.000		-		0.000	0.000	7.603	0.000
Target Hardware - Target Hardware/Multi-Class Components - 5	FFRDC	Massachusetts Institute of Technology, Lincoln Lab:Lexington, MA	0.000	0.653		0.000		1.013	Nov 2013	-		1.013	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 6	FFRDC	Sandia National Laboratories:Albuquerque, NM	0.000	2.559		0.000		2.237	Nov 2013	-		2.237	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components-7	C/CPAF	Multi-Class Components RFP:TBD	0.000	0.000		0.000		6.146	Nov 2013	-		6.146	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 1	C/CPAF	Lockheed Martin Space Systems	0.000	12.631		0.000		18.151	Nov 2013	-		18.151	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMD5 Targets Program</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			
		Company: Courtland, AL													
Target Hardware - Target Hardware/SRBM - 2	C/CPAF	Orbital Sciences Corporation: Chandler, AZ	0.000	4.192		2.320	Nov 2012	0.000		-		0.000	0.000	6.512	0.000
Target Hardware - Target Hardware/SRBM - 3	C/CPIF	L3 Communications/ Coleman Aerospace: Orlando, FL	0.000	0.000		1.620	Nov 2012	0.767	Nov 2013	-		0.767	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 4	C/CPIF	Lockheed Martin Space Systems Company: Courtland, AL	0.000	3.282		0.730	Nov 2012	3.294	Nov 2013	-		3.294	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 5	C/CPIF	Orbital Sciences Corporation: Chandler, AZ	0.000	5.803		0.000		0.000		-		0.000	5.803	11.606	5.803
Target Hardware - Target Hardware/SRBM - 6	C/FFP	Orbital Sciences Corporation: Chandler, AZ	0.000	1.310		0.000		0.000		-		0.000	1.310	2.620	1.310
Target Hardware - Target Hardware/SRBM - 7	MIPR	Naval Surface Warfare Center, Port Hueneme: Port Hueneme, CA	0.000	9.016		7.861	Nov 2012	19.013	Nov 2013	-		19.013	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 8	MIPR	Missile Defense Agency: Huntsville, AL	0.000	3.990		0.000		0.000		-		0.000	3.990	7.980	3.990
Target Hardware - Target Hardware/SRBM - 9	FFRDC	Sandia National Laboratories: Albuquerque, NM	0.000	0.189		3.070	Nov 2012	2.035	Nov 2013	-		2.035	Continuing	Continuing	Continuing
Program Operations - Program Operations - 1	C/CPAF	Targets MiDAESS Support: Huntsville, AL	0.000	34.734		35.325	Nov 2012	37.008	Nov 2013	-		37.008	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

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
Program Operations - Program Operations - 10	MIPR	Missile Defense Agency:Huntsville, AL	0.000	20.264		20.593	Nov 2012	21.433	Nov 2013	-		21.433	Continuing	Continuing	Continuing
Program Operations - Program Operations - 11	MIPR	Defense Finance and Accounting Services:Indianapolis, IN	0.000	0.000		0.000		0.225	Nov 2013	-		0.225	Continuing	Continuing	Continuing
Program Operations - Program Operations - 2	C/FFP	CACI:Huntsville, AL	0.000	0.169		0.172	Nov 2012	0.174	Nov 2013	-		0.174	Continuing	Continuing	Continuing
Program Operations - Program Operations - 3	C/FFP	Colsa Corporations:Huntsville, AL	0.000	1.052		0.000		0.000		-		0.000	1.052	2.104	1.052
Program Operations - Program Operations - 4	C/FFP	Tecolote Research, Inc.:Huntsville, AL	0.000	0.086		0.087	Jan 2013	0.087	Nov 2013	-		0.087	Continuing	Continuing	Continuing
Program Operations - Program Operations - 5	C/FFP	Phacil:Huntsville, AL	0.000	0.000		0.253	Nov 2012	0.255	Nov 2013	-		0.255	Continuing	Continuing	Continuing
Program Operations - Program Operations - 6	FFRDC	Johns Hopkins University, Applied Physics Lab:Baltimore, MD	0.000	0.316		0.353	Nov 2012	0.350	Nov 2013	-		0.350	Continuing	Continuing	Continuing
Program Operations - Program Operations - 7	MIPR	US Army Aviation & Missile Command:Huntsville, AL	0.000	1.022		1.212	Nov 2012	1.094	Nov 2013	-		1.094	Continuing	Continuing	Continuing
Program Operations - Program Operations - 8	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	0.000	0.674		0.746	Nov 2012	0.874	Nov 2013	-		0.874	Continuing	Continuing	Continuing
Program Operations - Program Operations - 9	MIPR	US Air Force Space & Missile Systems Center (SMC):Albuquerque, NM	0.000	0.702		1.099	Nov 2012	1.344	Nov 2013	-		1.344	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMD5 Targets Program</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			
Target Support - Target Support/Logistics - 1	C/CPAF	Lockheed Martin Space Systems Company: Courtland, AL	0.000	5.138		4.977	Nov 2012	3.747	Nov 2013	-		3.747	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 10	MIPR	National Security Agency: Albuquerque, NM	0.000	0.000		0.848	Nov 2012	0.000		-		0.000	0.000	0.848	0.000
Target Support - Target Support/Logistics - 11	MIPR	Naval Surface Warfare Center :Crane, IN	0.000	0.067		4.674	Nov 2012	0.802	Nov 2013	-		0.802	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 12	MIPR	Redstone Arsenal Garrison: Huntsville, AL	0.000	1.424		1.725	Nov 2012	0.000		-		0.000	0.000	3.149	0.000
Target Support - Target Support/Logistics - 13	MIPR	Redstone Technical Test Center: Huntsville, AL	0.000	0.502		0.000		0.000		-		0.000	0.502	1.004	0.502
Target Support - Target Support/Logistics - 14	MIPR	US Army Joint Munitions Command: Hawthorne Army Depot, NV	0.000	0.047		0.057	Nov 2012	0.054	Nov 2013	-		0.054	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 15	MIPR	US Naval Weapons Station: Earl, NJ	0.000	0.035		0.042	Nov 2012	0.039	Nov 2013	-		0.039	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 16	MIPR	US Property & Fiscal Office for Arizona: Phoenix, AZ	0.000	0.929		2.258	Nov 2012	0.705	Nov 2013	-		0.705	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 17	MIPR	US Army White Sands Missile Range: White Sands, NM	0.000	0.132		0.000		0.000		-		0.000	0.132	0.264	0.132
Target Support - Target Support/Logistics - 18	MIPR	Defense Finance & Accounting Service: Indianapolis, IN	0.000	0.284		0.633	Nov 2012	0.165	Nov 2013	-		0.165	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</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			
Target Support - Target Support/Logistics - 19	C/FFP	Northrop Grumman Space Systems:Albuquerque, NM	0.000	0.620		0.751	Nov 2012	0.000		-		0.000	0.000	1.371	0.000
Target Support - Target Support/Logistics - 2	C/CPFF	Alliant Techsystems, Inc. (ATK):Magna, UT	0.000	0.790		1.277	Nov 2012	0.800	Nov 2013	-		0.800	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 3	C/FFP	Aerojet Corporation:Albuquerque, NM	0.000	0.342		0.536	Nov 2012	0.360	Nov 2013	-		0.360	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 4	C/FFP	Alliant Techsystems, Inc. (ATK):Magna, UT	0.000	1.350		3.045	Nov 2012	1.200	Nov 2013	-		1.200	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 5	MIPR	Aviation & Missile Research, Dev & Eng Center:Huntsville, AL	0.000	0.113		0.109	Nov 2012	0.110	Nov 2013	-		0.110	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 6	MIPR	Hill Air Force Base:Ogden, UT	0.000	0.836		1.497	Nov 2012	0.832	Nov 2013	-		0.832	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 7	MIPR	Missile Defense Agency:Huntsville, AL	0.000	0.000		6.726	Nov 2012	0.812	Nov 2013	-		0.812	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 8	MIPR	Naval Air Warfare Center, China Lake:China Lake, CA	0.000	1.400		1.695	Nov 2012	0.000		-		0.000	0.000	3.095	0.000
Target Support - Target Support/Logistics - 9	MIPR	New Mexico State University Physical Sciences Lab:Las Cruces, NM	0.000	0.162		0.000		0.000		-		0.000	0.162	0.324	0.162
Target Support - Target Support/Systems Engineering - 1	C/CPAF	Lockheed Martin Space Systems Company:Courland, AL	0.000	26.163		23.650	Nov 2012	18.210	Nov 2013	-		18.210	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMD5 Targets Program</i>
---	---	---

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
Target Support - Target Support/Systems Engineering - 10	FFRDC	Sandia National Laboratories:Albuquerque, NM	0.000	0.227		0.000		0.000		-		0.000	0.227	0.454	0.227
Target Support - Target Support/Systems Engineering - 12	MIPR	Defense Finance & Accounting Service:Indianapolis, IN	0.000	0.382		0.463	Nov 2012	0.363	Nov 2013	-		0.363	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 13	C/CPAF	Orbital Sciences Corporation:Chandler, AZ	0.000	0.000		0.000		1.028	Nov 2013	-		1.028	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 2	FFRDC	Aerospace Corporation:El Segundo, CA	0.000	4.535		4.134	Nov 2012	2.861	Nov 2013	-		2.861	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 3	C/FFP	Northrop Grumman Space Systems:Albuquerque, NM	0.000	4.651		3.082	Nov 2012	1.041	Nov 2013	-		1.041	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 4	C/FFP	Teledyne Solutions, Inc.:Huntsville, AL	0.000	0.016		0.042	Nov 2012	0.000		-		0.000	0.000	0.058	0.000
Target Support - Target Support/Systems Engineering - 5	C/FFP	Wyle Laboratories:Huntsville, AL	0.000	0.941		0.399	Nov 2012	0.000		-		0.000	0.000	1.340	0.000
Target Support - Target Support/Systems Engineering - 6	FFRDC	Johns Hopkins University, Applied Physics Lab:Baltimore, MD	0.000	0.522		1.090	Nov 2012	0.845	Nov 2013	-		0.845	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 7	MIPR	US Air Force Space & Missile Systems Center (SMC):Albuquerque, NM	0.000	0.904		1.385	Nov 2012	0.803	Nov 2013	-		0.803	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 8	MIPR	Aviation & Missile Research,	0.000	8.484		8.405	Nov 2012	4.035	Nov 2013	-		4.035	Continuing	Continuing	Continuing

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMD5 Targets Program</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			
		Dev & Eng Center:Huntsville, AL													
Target Support - Target Support/Systems Engineering - 9	C/CPAF	L3 Communications/ Coleman Aerospace:Orlando, FL	0.000	0.922		0.000		0.000		-		0.000	0.922	1.844	0.922
Subtotal			0.000	497.550		414.696		468.713		0.000		468.713			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

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	0.000	497.550		414.696		468.713		0.000		468.713				

Remarks
N/A

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMD5 Targets Program</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
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)		▲																										
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 14)		▲																										
IRBM Type 1/Type 2 Preliminary Design Review		▲																										
eMRBM Critical Design Review		▲																										
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)		▲																										
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)			▲																									
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)			▲																									
IRBM Type 1/Type 2 Critical Design Review				▲																								
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)				▲																								
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 1)				▲																								
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)					▲																							
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 13)						△																						
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 12)						△																						
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 11)						△																						
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 12)						△																						
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 11)						△																						
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 10)						△																						
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 18)						△																						
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 13)						△																						
LV-2 Pre-Ship Readiness Review (Ship Set 4)						△																						

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</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
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)						△																						
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)						△																						
eMRBM Pre-Ship Readiness Review (Ship Set 2)						△																						
eMRBM Pre-Ship Readiness Review (Ship Set 1)						△																						
MRBM Type 3 Critical Design Review						△																						
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)									△																			
LV-2 Pre-Ship Readiness Review (Ship Set 6)									△																			
LV-2 Pre-Ship Readiness Review (Ship Set 5)									△																			
eMRBM Pre-Ship Readiness Review (Ship Set 3)									△																			
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 1)												△																
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 2)												△																
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)												△																
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)													△															
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 14)													△															
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 3)													△															
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 5)													△															
SRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)														△														
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 12)														△														
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)														△														
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)														△														
eMRBM Pre-Ship Readiness Review (Ship Set 4)														△														

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</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
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 1)													△															
ICBM Booster #1 Pre-Ship Readiness Review													△															
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 2)													△															
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 17)														△														
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 3)														△														
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 4)															△													
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 5)																△												
eMRBM Pre-Ship Readiness Review (Ship Set 5)																	△											
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 6)																		△										
ICBM Booster #2 Pre-Ship Readiness Review																			△									
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 5)																				△								
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 6)																					△							
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 7)																						△						
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 8)																							△					
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 6)																								△				
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 9)																									△			
ICBM Booster #3 Pre-Ship Readiness Review																										△		
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 7)																											△	
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)																											△	
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 5)																											△	

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</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
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 6)																								△				
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 8)																												△
ICBM Booster #5 Pre-Ship Readiness Review																												△
ICBM Booster #4 Pre-Ship Readiness Review																												△
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)																												△
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)																												△

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 8)	2	2012	2	2012
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 14)	2	2012	2	2012
IRBM Type 1/Type 2 Preliminary Design Review	2	2012	2	2012
eMRBM Critical Design Review	2	2012	2	2012
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 9)	2	2012	2	2012
MRT (SRBM) Pre-Ship Readiness Review (Ship Set 10)	3	2012	3	2012
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 1)	3	2012	3	2012
IRBM Type 1/Type 2 Critical Design Review	4	2012	4	2012
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 10)	4	2012	4	2012
E-LRALT (MRBM) Pre-Ship Readiness Review (Ship Set 1)	4	2012	4	2012
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)	1	2013	1	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 13)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 11)	2	2013	2	2013
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2013	2	2013
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 11)	2	2013	2	2013
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 10)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 18)	2	2013	2	2013
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 13)	2	2013	2	2013
LV-2 Pre-Ship Readiness Review (Ship Set 4)	2	2013	2	2013
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)	2	2013	2	2013
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)	2	2013	2	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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDS Targets Program</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
eMRBM Pre-Ship Readiness Review (Ship Set 2)	2	2013	2	2013
eMRBM Pre-Ship Readiness Review (Ship Set 1)	2	2013	2	2013
MRBM Type 3 Critical Design Review	2	2013	2	2013
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)	1	2014	1	2014
LV-2 Pre-Ship Readiness Review (Ship Set 6)	1	2014	1	2014
LV-2 Pre-Ship Readiness Review (Ship Set 5)	1	2014	1	2014
eMRBM Pre-Ship Readiness Review (Ship Set 3)	1	2014	1	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 1)	3	2014	3	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 2)	3	2014	3	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)	3	2014	3	2014
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)	4	2014	4	2014
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 14)	4	2014	4	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 3)	4	2014	4	2014
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 5)	4	2014	4	2014
SRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)	2	2015	2	2015
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 12)	2	2015	2	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)	2	2015	2	2015
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)	2	2015	2	2015
eMRBM Pre-Ship Readiness Review (Ship Set 4)	2	2015	2	2015
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 1)	2	2015	2	2015
ICBM Booster #1 Pre-Ship Readiness Review	3	2015	3	2015
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 2)	3	2015	3	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 17)	4	2015	4	2015
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 3)	4	2015	4	2015
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 4)	1	2016	1	2016

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 0603915C: <i>Ballistic Missile Defense Targets</i>	PROJECT MT05: <i>BMDs Targets Program</i>
---	---	---

Events	Start		End	
	Quarter	Year	Quarter	Year
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 5)	2	2016	2	2016
eMRBM Pre-Ship Readiness Review (Ship Set 5)	2	2016	2	2016
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 6)	3	2016	3	2016
ICBM Booster #2 Pre-Ship Readiness Review	3	2016	3	2016
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 5)	4	2016	4	2016
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 6)	4	2016	4	2016
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 7)	4	2016	4	2016
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 8)	1	2017	1	2017
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 6)	2	2017	2	2017
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 9)	2	2017	2	2017
ICBM Booster #3 Pre-Ship Readiness Review	3	2017	3	2017
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 7)	4	2017	4	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)	4	2017	4	2017
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 5)	4	2017	4	2017
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 6)	4	2017	4	2017
FMA-2 (SRBM) Pre-Ship Readiness Review (Ship Set 8)	3	2018	3	2018
ICBM Booster #5 Pre-Ship Readiness Review	3	2018	3	2018
ICBM Booster #4 Pre-Ship Readiness Review	3	2018	3	2018
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)	3	2018	3	2018
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)	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 0603915C: <i>Ballistic Missile Defense Targets</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	21.051	26.544	-	26.544	25.662	20.879	26.680	25.794	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

Beginning in FY 2013, funding was transferred from BMD Enabling Program Element 0603890C Budget Project MD40.

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	21.051	26.544
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	21.051	26.544

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 0603915C: <i>Ballistic Missile Defense Targets</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 0603915C: <i>Ballistic Missile Defense Targets</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 Infrastructure Support (MIPR)	MIPR	Various; Multi:AL, VA	0.000	0.000		11.340	Mar 2013	11.340	Mar 2014	-		11.340	Continuing	Continuing	Continuing
Program Wide Support - Agency Infrastructure Support (FFP)	C/FFP	Northrup Gruman; Multi:AL, VA	0.000	0.000		9.460	Jul 2013	9.460	Jul 2014	-		9.460	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various; Multi:AL, CA, CO, VA	0.000	0.000		0.251	Jun 2013	5.744	Jun 2014	-		5.744	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		21.051		26.544		0.000		26.544			

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	21.051	26.544	0.000	26.544			

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0604880C: <i>Land Based SM-3 (LBSM3)</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	528.223	299.012	276.338	129.374	-	129.374	124.547	51.927	55.808	32.938	Continuing	Continuing
MD68: <i>AEGIS Ashore</i>	528.223	290.007	245.211	117.072	-	117.072	96.940	47.811	52.408	30.851	Continuing	Continuing
MC68: <i>Cyber Operations</i>	-	0.000	0.000	0.242	-	0.242	0.251	0.255	0.260	0.264	Continuing	Continuing
MT68: <i>Aegis Ashore Test</i>	-	0.000	17.100	5.130	-	5.130	21.300	1.200	0.000	0.000	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	9.005	14.027	6.930	-	6.930	6.056	2.661	3.140	1.823	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

This program supports the development of a land based Standard Missile-3 (SM-3) capability, hereafter referred to as Aegis Ashore. On 17 September 2009, the President announced an overarching plan to provide regional missile defense to U.S. deployed forces, allies and partners in Europe called the European Phased Adaptive Approach (EPAA). The United States will also pursue phased adaptive approaches in the Asia Pacific and the Middle East by building on current efforts. The PAA envisions tailoring U.S. Ballistic Missile Defense (BMD) capabilities to specific theater needs to enhance integrated regional missile defenses to protect defended assets against medium, intermediate, and ultimately intercontinental range ballistic missiles. Within this policy, a European PAA specifically addresses a timeline to deploy a mix of afloat and land-based BMD capabilities. Aegis Ashore represents one of these land-based capabilities.

Phase I of EPAA (completed December 2011): Focuses on the protection against short and medium-range ballistic missiles. As part of phase I, which is already underway, the United States has deployed multi-mission Aegis ships with BMD capability and the SM-3 Block IA missile. Phase I also included establishing separate forward-based AN/TPY-2 radar in Turkey to provide a cue to multi-mission Aegis ships with BMD capability and to future Aegis Ashore sites for launch on remote engagements.

Phase II of EPAA (2015): Deploys the first land-based BMD configuration (Aegis Ashore) in Romania, and deploys the SM-3 Block IB on land at the Aegis Ashore site and at sea on multi-mission Aegis ships with BMD capability.

Phase III of EPAA (2018): Deploys a second land based Aegis Ashore in Poland, and introduces an upgraded Standard Missile, the SM-3 Block IIA. This missile brings improved coverage against medium and intermediate range ballistic threats, and extends coverage to the bulk of the European continent.

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>
---	---

Aegis Ashore is a key component of Phases II and III in the European PAA and will provide Aegis Missile Defense capability against short and medium range ballistic missiles in an ashore configuration. It will be similar to the Aegis At-Sea BMD capability inherent in the DDG-113 series of the Arleigh Burke Class Destroyers to facilitate training and logistical support by the lead service, Navy. Aegis Ashore essentially re-hosts the required BMD components of a Navy Destroyer in an ashore configuration to include SPY RADAR, Vertical Launch System, computing infrastructure, Command, Control, Communications, Computers and Intelligence (C4I) systems, and operator consoles. It will provide sophisticated engagement strategies. Aegis Ashore can adapt to the threat and can be deployed/redeployed worldwide to areas needed to provide persistent coverage for the Geographic Combatant Commanders.

The initial Aegis Ashore Missile Defense System (AAMDS) will be deployed to Romania in FY 2015. A second AAMDS will be deployed to Poland in FY 2018 as part of the European Phased Adaptive Approach.

Missile Defense Agency (MDA) approved the acquisition strategy in FY 2010.

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	306.185	276.338	127.235	-	127.235
Current President's Budget	299.012	276.338	129.374	-	129.374
Total Adjustments	-7.173	0.000	2.139	-	2.139
• 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	-3.214	0.000			
• SBIR/STTR Transfer	-3.959	0.000			
• Other Adjustment	0.000	0.000	2.139	-	2.139

Change Summary Explanation

The FY 2014 increase of \$2.139 million reflects a 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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</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
MD68: <i>AEGIS Ashore</i>	528.223	290.007	245.211	117.072	-	117.072	96.940	47.811	52.408	30.851	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

Deployed sites, referred to as an Aegis Ashore Missile Defense System Complex (AAMDSC), will be able to be modified to support future computer program and missile variants in accordance with the European Phased Adaptive Approach (EPAA). The initial AAMDSC will be deployed to Romania in 2015 and will employ Advanced Capability Build 12 (ACB 12)/Aegis BMD 5.0 and SM-3 Block IB. A second AAMDSC will be deployed to Poland in FY 2018 in accordance with the PAA. This site will provide an Aegis Ashore exoatmospheric defense against short to medium and intermediate range ballistic missile threats in the later stages of flight. If the threat dictates, additional systems could be purchased and deployed globally to support Geographic Combatant Commanders. The deployed sites will be capable of being upgraded to address current and future ballistic missile threats.

The Aegis Ashore Radar Deckhouse will be fabricated, erected and used to test the Pacific Missile Range Facility (PMRF) equipment at the Lockheed Martin Moorestown, NJ campus. The associated foundation and utilities at Moorestown will be funded by research, development, test and evaluation (RDT&E) under the authority of 10 USC 2353. Once the PMRF equipment testing is completed in the New Jersey (NJ) Deckhouse, the PMRF equipment will be shipped to PMRF, where it will be installed and integrated into an identical deckhouse located at the PMRF. The Aegis Ashore Deckhouse at NJ will be subsequently used for Romania. This dual deckhouse approach is required to reduce risk at PMRF and will result in fabrication and construction efficiencies.

Research and Development efforts may include required modifications to adapt the Aegis Weapon System for land based use.

In support of EPAA Phase III, Aegis Ashore will integrate the Aegis BMD 5.1 and Standard Missile (SM-3) Block IIA capabilities into the Aegis Ashore platforms.

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

	FY 2012	FY 2013	FY 2014
Title: Aegis Weapon System Development	263.400	213.821	80.590
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments:			

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>		PROJECT MD68: <i>AEGIS Ashore</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Awarded Deckhouse Fabrication Contract - Delivered Weapon System and equipment skids to New Jersey - Delivered Multi-Mission Signal Processor (MMSP) #1 - Procured long lead material for Romania - Ship Deckhouse and Aegis Weapon System components to Hawaii <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Complete Construction of Host Nation 1 Deckhouse in New Jersey - Complete Integration and test of PMRF Weapon System in New Jersey - Complete installation of Deckhouse, Deckhouse Support Building, and Launcher at PMRF - Deliver equipment to Pacific Missile Range Facility (PMRF) - Deliver Weapon System and equipment skids to PMRF - Conduct Aegis Light-Off of completely integrated system - Complete Integration and Test in PMRF - Deliver Host Nation 1 Weapon System and equipment skids for Integration and Testing in New Jersey <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Conduct Aegis Light-Off (ALO) of Aegis Weapon System in the Pacific Missile Range Facility (PMRF) Deckhouse - Complete Integration and Testing of Aegis Ashore at PMRF - Conduct Aegis Light-Off of Aegis Weapon System in the Romania Deckhouse in New Jersey - Complete Integration and test of Aegis Weapon System in Romania Deckhouse in New Jersey - Remove Aegis Weapon System equipment from New Jersey and ship to Romania - Disassemble Deckhouse in New Jersey and ship to Romania - Complete installation of Deckhouse Support Building and Launchers in Romania - Prepare to receive Aegis Weapon System and equipment for Integration and Testing in Romania - Receive Deckhouse and begin installation in Romania <p>The decrease in FY 2014 is due to the acquisition of long lead hardware in FY 2011 - 2013.</p>				
Title: Global Deployment Operations		14.514	24.189	5.982
		Articles: 0	0	0
Description: See Description below.				
FY 2012 Accomplishments:				

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
---	----------------	----------------	----------------

<p>- Provided operations support for all MDA Global Deployments to include civilian salaries, contractor support services (CSS), Federally Funded Research and Development Center (FFRDC) and travel.</p> <p>FY 2013 Plans:</p> <p>- Provide operations support for all MDA Global Deployments to include civilian salaries, Contractor Support Services (CSS), FFRDC and travel. Manpower and travel requirements ramp up to support Romania site activation</p> <p>FY 2014 Plans:</p> <p>- Provide operations support for Aegis Ashore deployments to include civilian salaries, contractor support services, and travel for Global Deployment (GD) program office manpower directly supporting Aegis Ashore deployments. Beginning FY 2013 all indirect GD manpower requirements and travel are budgeted in program wide support (PWS).</p> <p>- GD program office requirements increase from FY 2013 to FY 2014 by \$.999 million to provide full-time on-site support at the Romania site.</p> <p>The overall decrease in FY 2014 is a result of realignment of the Global Deployment site activation requirement to more accurately distinguish between program office requirements and total site activation requirements.</p>			
---	--	--	--

Title: Site Activation	12.093	7.201	30.500
Articles:	0	0	0

Description: See Description below.

FY 2012 Accomplishments:

- Continued Site Activation for Pacific Missile Range Facility (PMRF) Aegis Ashore site to include PMRF-provided services, facility maintenance, utilities, fuel, and administrative communications.
- Initiated Romania commercial power infrastructure connection project.

FY 2013 Plans:

- Continue Site Activation for Aegis Ashore site at PMRF.
- Begin Site Activation for Aegis Ashore site in Romania.

FY 2014 Plans:

- Complete site activation for Aegis Ashore site at PMRF to include PMRF-provided services, facility maintenance, utilities, fuel, and administrative communications
- Continue site activation for Aegis Ashore site in Romania to include temporary site activation facilities, site operating support, administrative communications, and on-site material handling equipment and services

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
- Design, purchase, and install an integrated electronic security system for Romania Aegis Ashore site security - a FY 2014 one-time \$6.399 million requirement. - Initiate phase 1 of a commercial power extension project to provide commercial power to the Poland Aegis Ashore site. - Conduct initial studies for Aegis Ashore site in Poland FY 2014 increase is a result of realignment of the Global Deployment site activation requirement to more accurately distinguish between program office requirements and total site activation requirements.			
Accomplishments/Planned Programs Subtotals	290.007	245.211	117.072

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
• 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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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
• 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
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	457.529	420.630	308.522		308.522	230.466	128.743	41.014	0.000	0.000	1,586.904

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>

D. Acquisition Strategy

Aegis Ashore awarded a contract for an Aegis Ashore Engineering Agent (AAEA). Broadly stated, the AAEA is responsible for the design, development, integration and test of the Aegis Weapons System capability into a reconstitutable deckhouse. Furthermore, the AAEA will support deployment to Pacific Missile Range Facility (PMRF) and Host Nations.

Aegis Ashore intends to utilize existing Navy hardware contracts to the maximum extent possible.

Aegis Ashore has awarded a MILCON contract for the fabrication and installation of the Aegis Ashore Launch Facility and Deckhouse Support Building at Pacific Missile Range Facility in Hawaii and the fabrication and installation of the Deckhouse Support Building in New Jersey. An additional RDT&E funded contract line item was added to the MILCON contract for the fabrication and installation of the Hawaii and New Jersey Deckhouses. This was a competitive award issued through Naval Facilities Command, Hawaii.

Competition is the intended Acquisition Strategy for Aegis Ashore Poland.

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</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			
Aegis Weapon System Development - AWS Deckhouse design and engineering - MD68	MIPR	Huntsville, AL:NAVFAC	1.000	25.709		13.033	Dec 2012	0.000		-		0.000	0.000	39.742	36.748
Aegis Weapon System Development - AWS Design, SEPM, Integration , Test and Certification - MD68 - 20117143581603	MIPR	NSWC Dahlgren:Dahlgren, VA	15.007	12.310		16.000	Nov 2012	5.256	Oct 2013	-		5.256	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development and Hardware - MD68	Various	Lockheed Martin:Moorestown, NJ, NAVSEA, and BAE	426.277	197.930		148.651	Jan 2013	48.196	Nov 2013	-		48.196	Continuing	Continuing	Continuing
Aegis Weapon System Development - C4I (SW, T&E, Spares, SEPM, ILS) - MD68	MIPR	SPAWAR:San Diego, CA	6.100	0.000		6.000	Oct 2012	12.361	Oct 2013	-		12.361	Continuing	Continuing	Continuing
Aegis Weapon System Development - Deckhouse - MD68	MIPR	NAVFAC:HI	25.500	0.000		14.200	Oct 2012	0.000		-		0.000	0.000	39.700	0.000
Aegis Weapon System Development - Deckhouse - MD68 - 2012725224459	MIPR	CENAU:-	0.000	0.000		0.000		6.731	Oct 2013	-		6.731	Continuing	Continuing	Continuing
Aegis Weapon System Development - Design, SEPM, ILS, Test Integration - MD68 - 20117143581602	MIPR	NSWC PHD:Port Hueneme, CA	5.000	3.208		4.967	Nov 2012	4.130	Oct 2013	-		4.130	Continuing	Continuing	Continuing
Aegis Weapon System Development - Flight Safety Support - MD68	SS/CPAF	Raytheon:Tucson, AZ	8.800	8.360		0.000		0.000		-		0.000	0.000	17.160	17.160
Aegis Weapon System Development - Technical	MIPR	JHU/APL:Columbia, MD	7.100	4.291		3.970	Nov 2012	2.025	Oct 2013	-		2.025	Continuing	Continuing	Continuing

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</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			
Design Agent- MD68 - 20117143581595															
Aegis Weapon System Development - VLS Design and Hardware - MD68	MIPR	NAVSEA-LM/BAE:Baltimore and Minneapolis	5.100	11.592		7.000	Dec 2012	1.891	Oct 2013	-		1.891	Continuing	Continuing	Continuing
Global Deployment Operations - MD68	MIPR	None:Huntsville, AL	18.898	14.514		24.189	Oct 2012	5.982	Oct 2013	-		5.982	Continuing	Continuing	Continuing
Site Activation - MD68	MIPR	None:Huntsville, AL	9.441	12.093		7.201	Nov 2012	30.500	Oct 2013	-		30.500	Continuing	Continuing	Continuing
Subtotal			528.223	290.007		245.211		117.072		0.000		117.072			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>
---	---	---

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	528.223	290.007	245.211	117.072	0.000	117.072			

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, MIPRs, 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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</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 Ashore Critical Design Review	▲																											
AA ALO 1 (Moorestown, NJ)						△																						
AA ALO 2 (AAMDTC in PMRF)										△																		
AA ALO 3 (Romania Equipment in NJ)										△																		
AA ALO 4 (AAMDSC in Romania)														△														

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MD68: <i>AEGIS Ashore</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis Ashore Critical Design Review	1	2012	1	2012
AA AL0 1 (Moorestown, NJ)	2	2013	2	2013
AA AL0 2 (AAMDTC in PMRF)	1	2014	1	2014
AA AL0 3 (Romania Equipment in NJ)	1	2014	1	2014
AA AL0 4 (AAMDSC in Romania)	2	2015	2	2015

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MC68: <i>Cyber Operations</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
MC68: <i>Cyber Operations</i>	-	0.000	0.000	0.242	-	0.242	0.251	0.255	0.260	0.264	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 MC68 is a new Defensive Cyber Operations Project established in this Program Element (PE) 0604880C for PB 2014. Funds were previously reported in Project MD68 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 Aegis Ashore 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 Cybersecurity 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	0.242
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: See MD68 for FY 2013 plans			
FY 2014 Plans:			

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MC68: <i>Cyber Operations</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Conduct cyber security / information assurance engineering and architecture planning for Aegis Ashore information technology systems.			
Plan and test the IA controls for Ballistic Missile Defense System (BMDS) Aegis Ashore systems.			
Develop Aegis Ashore DIACAP certification and accreditation packages.			
Conduct Controls Validation Testing (CVT) of Aegis Ashore mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.			
Conduct annual information assurance reviews on the Aegis Ashore enclaves to assess compliance in implementing and maintaining IA controls.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.242

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
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	1,143.313	903.172	1,033.903		1,033.903	1,045.500	1,002.568	815.198	781.824	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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing
• 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
• 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

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MC68: <i>Cyber Operations</i>
---	---	---

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>
• 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

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MC68: <i>Cyber Operations</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			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies:AL, VA	0.000	0.000		0.000		0.242		-		0.242	0.000	0.242	0.000
Subtotal			0.000	0.000		0.000		0.242		0.000		0.242	0.000	0.242	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	0.000	0.000	0.000	0.242	0.000	0.242	0.000	0.242	0.000

Remarks
N/A

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</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
MT68: <i>Aegis Ashore Test</i>	-	0.000	17.100	5.130	-	5.130	21.300	1.200	0.000	0.000	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

The MT68: Aegis Ashore Test project supports preparation for and execution of the Controlled Test Vehicle-01 (CTV-01) and the Flight Test Operational-02 (FTO-02) flight test missions. CTV-01 will be a demonstration of the functionality of the shore based Aegis Weapon System (AWS) with the Mk 41 Vertical Launcher System (VLS) and verify the system's ability to launch, capture and provide uplink and downlink guidance with the Standard Missile-3 Block IB. FTO-02 will be an end-to-end Aegis Ballistic Missile Defense (ABMD) operational test within a Phased Adaptive Approach Phase 2 tactically representative Ballistic Missile Defense System network.

This effort will provide general support for Missile Defense Agency (MDA), Aegis Ballistic Missile Defense flight testing. It will provide planning, analysis, trade studies, problem resolution, tests, and associated on-site support tasks necessary for supporting the development, integration, and operations of the above Flight Tests to include: Test & Evaluation Technical Mgmt, Mission Planning & Analysis, Data Analysis Group Support, Kill Assessment Support, Coherent Doppler Collection System (CDCS) Support, Digital Data Collection System (DDCS) Support, Aegis Ashore Project Officers & Engineers, Interoperability Engineering, Infrared (IR) Kill Assessment, Pacific Missile Range Facility (PMRF) Support and USN Operational Test Authority (OTA) Support

Aegis Ashore Flight Test Missions (AAFTM)-01 and 02 will be resourced under Program Element 0603892C, Aegis Ballistic Missile Defense.

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

	FY 2012	FY 2013	FY 2014
Title: Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event)	0.000	17.100	5.130
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments: - FY 2012 efforts funded in MD68			
FY 2013 Plans:			

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. <i>FY 2014 Plans:</i> - Prepare for and conduct Ballistic Missile Defense System Flight and Ground Test events as reflected in the Integrated Master Test Plan and the Exhibit R-4 schedule - The decrease is due to CTV-01 pre-test and test event being funded in FY 2013 CTV-01 post test analysis certification and FTO-02 pre-test analysis being funded in FY 2014.			
Accomplishments/Planned Programs Subtotals	0.000	17.100	5.130

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</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			
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			
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68	C/CPAF	L3 Communications:Waco, TX	0.000	0.000		0.850	Jul 2013	0.950	Oct 2013	-		0.950	Continuing	Continuing	Continuing
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68 - (DT Assist Event)	MIPR	NAWC/ PM:Pt. Mugu, CA	0.000	0.000		1.500	May 2013	0.550	Oct 2013	-		0.550	Continuing	Continuing	Continuing
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68 - 20111219347329	MIPR	NSWC/ PHD:Pt. Heuneme, CA	0.000	0.000		1.950	May 2013	0.450	Oct 2013	-		0.450	Continuing	Continuing	Continuing

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>
---	---	--

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			
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68 - 201112193488909	MIPR	JHU/ APL:Laurel, MD	0.000	0.000		2.325	May 2013	0.000		-		0.000	0.000	2.325	2.325
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68 - 201112193501551	MIPR	Aegis BMD:VA, CA, MA, MD	0.000	0.000		4.450	May 2013	2.150	Oct 2013	-		2.150	Continuing	Continuing	Continuing
Conduct Aegis Ashore Controlled Test Vehicle-01 (DT Assist Event) - Aegis Ashore Test MT68 - DT Assist Event	MIPR	PMRF: Barking Sands:Kauai, HI	0.000	0.000		6.025	May 2013	1.030	Oct 2013	-		1.030	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		17.100		5.130		0.000		5.130			

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

	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	17.100	5.130	0.000	5.130			

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>			PROJECT MT68: <i>Aegis Ashore 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

Remarks N/A									
-----------------------	--	--	--	--	--	--	--	--	--

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>

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

	FY 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	1	2	3	4
AA CTV-01 (Aegis Ashore Flight Test)											▲																					
AA FTM-01 (Aegis Ashore Intercept Flight Test)											▲																					
AA FTM-02 (Aegis Ashore Intercept Flight Test)											▲																					
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)															▲																	
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																																▲

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 0604880C: <i>Land Based SM-3 (LBSM3)</i>	PROJECT MT68: <i>Aegis Ashore Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
AA FTM-01 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
AA FTM-02 (Aegis Ashore Intercept Flight Test)	1	2015	1	2015
FTO-02 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
FTO-03 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	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 0604880C: <i>Land Based SM-3 (LBSM3)</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>	-	9.005	14.027	6.930	-	6.930	6.056	2.661	3.140	1.823	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	9.005	14.027	6.930
Articles:	0	0	0
Description: See Description below.			
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	9.005	14.027	6.930

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 0604880C: <i>Land Based SM-3 (LBSM3)</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 0604880C: <i>Land Based SM-3 (LBSM3)</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 Facilities and Maintenance (MIPR)	MIPR	Various; Multi:AL, CA, CO, VA	0.000	0.000		10.670	May 2013	3.573	May 2014	-		3.573	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance (Reqn)	Reqn	Various; Multi:AL, CA, CO, VA	0.000	0.000		3.357	Jan 2013	3.357	Jan 2014	-		3.357	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various:Multi: AL, CA, CO, VA	0.000	9.005		0.000		0.000		-		0.000	9.005	18.010	0.000
Subtotal			0.000	9.005		14.027		6.930		0.000		6.930			

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	9.005	14.027	6.930	0.000	6.930			

Remarks
N/A

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</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	737.968	457.529	420.630	308.522	-	308.522	230.466	128.743	41.014	0.000	0.000	2,324.872
MD09: <i>SM-3 Block IIA Co-Development</i>	737.968	441.046	399.284	289.817	-	289.817	211.582	95.892	25.945	0.000	0.000	2,201.534
MT09: <i>SM-3 Block IIA Co-Development Test</i>	-	0.000	0.000	2.303	-	2.303	7.680	26.254	12.768	0.000	0.000	49.005
MD40: <i>Program-Wide Support</i>	-	16.483	21.346	16.402	-	16.402	11.204	6.597	2.301	0.000	0.000	74.333

[#] 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 Aegis Ballistic Missile Defense (Aegis BMD) mission is to deliver an enduring, operationally effective and supportable Ballistic Missile Defense capability to defend the nation, deployed forces, friends and allies, and to increase this capability by delivering evolutionary improvements as part of Ballistic Missile Defense System (BMDS) upgrades. Aegis BMD provides a forward-deployable, mobile capability to detect and track Ballistic Missiles of all ranges, and the ability to destroy Short-Range Ballistic Missiles (SRBM), Medium-Range Ballistic Missiles (MRBM), and Intermediate-Range Ballistic Missiles (IRBM) in the midcourse phase of flight and Intercontinental Ballistic Missiles (ICBMs) in early phases of flight. Upgrades to both the Aegis BMD Weapon System and the STANDARD MISSILE-3 (SM-3) configurations evolve Aegis BMD to provide effective, supportable defensive capability against more difficult threats.

Beginning in 2006, Aegis BMD and the Japanese Ministry of Defense (JMOD) have undertaken an SM-3 Cooperative Development (SCD) program. The objective of the SCD project is the development and initial at-sea flight test of the SM-3 Blk IIA missile, and preparation for subsequent production decisions.

Key technology improvements planned for the SM-3 Block IIA missile include an increase in velocity and an increase in range provided by a 21-inch diameter rocket motor propulsion stack, more than doubled seeker sensitivity and more than three times divert capability incorporated in an advanced kinetic warhead. Key component technologies to be developed include, but are not limited to: lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor. Technology risk reduction will be conducted to reduce key component development risk. The U.S. and Japan will bear equitable burden to conduct the Project. The assignment of work documented in the U.S./Japan Memorandum of Understanding (MOU) SCD Annex represents an equitable sharing of work. The U.S. and Japan will fund the full extent of their participation in the Project. No funds will be transferred between the U.S. and Japan under the MOU.

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>
---	---

Proving Missile Defense:

Working with the Services` Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), Missile Defense Agency (MDA) has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments.

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	473.843	420.630	273.926	-	273.926
Current President's Budget	457.529	420.630	308.522	-	308.522
Total Adjustments	-16.314	0.000	34.596	-	34.596
• 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	-9.399	0.000			
• SBIR/STTR Transfer	-6.915	0.000			
• Other Adjustment	0.000	0.000	34.596	-	34.596

Change Summary Explanation

The FY 2014 adjustment to align missile development material requirements with the new Program Design Review hardware utilization matrix plan.

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</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
MD09: <i>SM-3 Block IIA Co-Development</i>	737.968	441.046	399.284	289.817	-	289.817	211.582	95.892	25.945	0.000	0.000	2,201.534
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 U.S. and Japan have a mutual interest in the evolutionary development of improvements to the Standard Missile-3 (SM-3). In FY 2006, the two countries signed a Memorandum of Understanding (MOU) for the co-development of an upgraded, 21-inch diameter SM-3 missile (SM-3 Block IIA). The objective of the SM-3 Cooperative Development (SCD) project is the development and initial at-sea flight test of the SM-3 Blk IIA missile. The SM-3 Block IIA missile will increase the area that can be defended by Aegis Ballistic Missile Defense (BMD) and increase the probability of kill against a larger threat set. It will leverage enhanced capability provided by Ballistic Missile Defense System (BMDS) sensor upgrades. The SM-3 Block IIA missile development will build upon established joint research investments by both the U.S. and Japan. The U.S. and Japan will equitably share both work and cost.

Key technology improvements planned for the SM-3 Block IIA missile include an increase in velocity and an increase in range provided by a 21-inch diameter rocket motor propulsion stack, more than doubled seeker sensitivity and more than three times divert capability incorporated in an advanced kinetic warhead. Key component technologies to be developed include, but are not limited to: lightweight nosecone, advanced kinetic warhead, 21-inch second stage rocket motor, and 21-inch third stage rocket motor. Technology risk reduction will be conducted to reduce key component development risk. The assignment of work documented in the U.S./Japan (MOU) SCD Annex represents an equitable sharing of work. The U.S. and Japan will fund the full extent of their participation in the Project. No funds will be transferred between the U.S. and Japan under the MOU.

The Scope of Work of the SCD project can be defined in three phases:

Phase I takes the program through System Design Review (SDR) completion. Aegis BMD will execute risk reduction efforts for the propulsion, nosecone, seeker and Divert Attitude Control System (DACS) development efforts and test plans, and conduct requirements definition for the SM-3 Block IIA missile configuration.

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
---	---	--

Phase II will refine the scope of work from SDR through Critical Design Review (CDR) completion. Aegis BMD will refine requirements and define the performance allocation and component configuration for the development and testing of the SM-3 Block IIA missile. Both parties will design, fabricate, test, and evaluate the SM-3 Block IIA missile sections per the agreed work-share.

Phase III will refine the scope of work from CDR to the completion of the SCD flight test program as defined in the Agreement. This phase defines developmental cost share agreements between the United States and the Government of Japan, completes component engineering and integration, executes cooperative flight tests, and continues discussions on production and maintenance options.

The SCD project will:

- Develop components for the SM-3 Block IIA missile and integrate them into an All Up Round (AUR):

- 21 inch 2nd and 3rd stage components (Japan work share)
- 21 inch nosecone (Japan work share)
- Advanced kinetic warhead (United States work share)
- Advanced Seeker (United States work share)
- Large Diameter Divert and Attitude Control System (United States work share)
- Integrate the SM-3 Blk IIA missile and Vertical Launch System (VLS) with Aegis ship systems:

- Includes development of a light weight VLS canister (United States work share)
- Conduct test and evaluation through ground and flight testing using an early delivery of Aegis Ballistic Missile Defense (BMD) 5.1 system (Joint work share)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Title: SM-3 Block IIA Cooperative Development (SCD)	441.046	399.284	289.817
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments: (IAW Project Phase II Jointly approved re-plan)			
SM-3 Blk IIA Missile Development: -Successfully completed Control Surface Assembly CDR and Staging Assembly CDR (Japan workshare).			

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>		PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				FY 2012
<ul style="list-style-type: none"> -Successfully completed Mk 72 Booster CDR and Booster Separation Assembly CDR (U.S. workshare). -Provided interim report to Weapons System Engineering Safety Review Board approval of missile safety design. -Completed Milestone 3 and began Milestone 4 of the integrated system demonstration. -BMD 4.0.1 Engineering (ENG REL) Development was removed from Program of Record due to government SCD Replan, which enabled the ability to conduct the SCD Flight Test Missions with an Aegis BMD 5.1 system. Aegis BMD system was developed under PE 0603892C. -VLS Canister -Completed shock, vibration, temperature/humidity, and hydrostatic pressure testing of SM-3 Blk IIA Mark 29 Missile Canister. -T&E: -Conducted analysis and planning for restrained firing test in FY 2013. <p>FY 2013 Plans: (IAW Project Phase II Jointly approved re-plan)</p> <ul style="list-style-type: none"> -Conduct SM-3 Blk IIA Propulsion Stack & System/Kinetic Warhead CDR. -Conduct Mk 29 Mod 0 Canister CDR. -Conduct and analyze results of Restrained Firing Test Event. -Begin procurement of SM-3 Blk IIA RDT&E Missile Rounds to support Flight Test program. -Demonstrate performance of missile sub-sections. -Hazard Assessment Test (HAT) 40FT Vertical Drop Test and Fast Cook-Off Test and analysis in preparation for CTV-1 (Aegis Flight Test). <p>FY 2014 Plans: SM-3 Blk IIA Missile Development:</p> <ul style="list-style-type: none"> - Begin missile integration testing. - Continue purchasing SM-3 Blk IIA RDT&E Missile Rounds to support Flight Test program. - Complete qualification of missile Guidance Section. - Begin missile level Hardware in the Loop (HWIL) integration testing. - Prepare for and conduct Ballistic Missile Defense System Flight and Ground Test events as reflected in the Integrated Master Test Plan and the Exhibit R-4 schedule <p>Vertical Launch System (VLS) Canister:</p> <ul style="list-style-type: none"> - Complete VLS ship integration drawings and VLS technical manuals. 				
				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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Prepare for and conduct Ballistic Missile Defense System Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule - Purchase materials to fabricate canisters in support of the SM-3 Cooperative Development Test Program. <p>The budget reduction in FY 2014 reflects Program of Record activities that will occur after CDR as the Program begins to transition from Development to Integration and Testing.</p>			
Accomplishments/Planned Programs Subtotals	441.046	399.284	289.817

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>
• 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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	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
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	457.529	420.630	308.522		308.522	230.466	128.743	41.014	0.000	0.000	1,586.904

Remarks

D. Acquisition Strategy

The SM-3 Cooperative Development program for the SM-3 Block IIA missile will utilize a performance-based approach that ties program decision milestones to the performance of development prototypes, as well as Propulsion Test Vehicle and Control Test Vehicle flight test article performance. Acquisition of hardware, software modifications and required services will occur in conjunction with contractual and tasking efforts to U.S. Navy work and events, and as defined by signed agreements between the Governments of the United States and Japan.

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>

Competition will be used to purchase any products or services, when appropriate.

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</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			
SM-3 Block IIA Cooperative Development (SCD) - BMD 4.0.1 Eng Rel - MD09	SS/CPAF	LOCKHEED MARTIN:NJ	26.611	0.000		0.000		0.000		-		0.000	0.000	26.611	43.023
SM-3 Block IIA Cooperative Development (SCD) - BMD 4.0.1 Eng Rel - MD09 - 20117135426623	MIPR	SEG:CA	2.750	0.000		0.000		0.000		-		0.000	0.000	2.750	3.273
SM-3 Block IIA Cooperative Development (SCD) - BMD 4.0.1 Eng Rel - MD09 - 20117135426625	MIPR	MDA:VA	1.234	0.000		0.000		0.000		-		0.000	0.000	1.234	2.669
SM-3 Block IIA Cooperative Development (SCD) - BMD 4.0.1 Eng Rel - MD09 - 20117135426627	MIPR	NSWC/DD/VA:Dahlgren, VA	0.780	0.000		0.000		0.000		-		0.000	0.000	0.780	1.687
SM-3 Block IIA Cooperative Development (SCD) - BMD 4.0.1 Eng Rel - MD09 - 20117135426628	MIPR	JHU/APL:MD	2.731	0.000		0.000		0.000		-		0.000	0.000	2.731	5.907
SM-3 Block IIA Cooperative Development (SCD) - Mission Assurance - MD09	MIPR	NSWC/DD/VA:Dahlgren, VA	0.400	0.350		0.700	Dec 2012	0.700	Dec 2013	-		0.700	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SCD - MD09	MIPR	MDA :VA	19.128	33.421		0.000		0.000		-		0.000	0.000	52.549	43.458
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Canister - MD09	MIPR	BAE:MD	19.826	13.100		5.911	Dec 2012	9.498	Dec 2013	-		9.498	Continuing	Continuing	Continuing

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</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			
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09	SS/CPAF	RAYTHEON:AZ	591.214	362.776		362.346	Nov 2012	250.812	Nov 2013	-		250.812	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 20117135426611	MIPR	NSWC/DD/VA:VA	13.120	5.431		4.469	Nov 2012	8.530	Nov 2013	-		8.530	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 20117135426613	MIPR	JHU/APL:MD	27.919	16.697		15.361	Nov 2012	18.203	Nov 2013	-		18.203	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 20117135426614	MIPR	MIT/LL:MA	4.503	0.900		0.922	Nov 2012	0.830	Nov 2013	-		0.830	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 20117135426616	MIPR	NSWC/PHD:CA	6.815	0.362		0.372	Nov 2012	0.553	Nov 2013	-		0.553	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 20117135426619	MIPR	NSWC IH:MD	5.553	0.442		0.308	Nov 2012	0.691	Nov 2013	-		0.691	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Bk IIA Development - MD09 - 2011713542662	MIPR	MDA:VA	12.916	7.567		0.000		0.000		-		0.000	0.000	20.483	20.483

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</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			
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA VLS - MD09	MIPR	Lockheed Martin: Baltimore, MD	0.968	0.000		0.000		0.000		-		0.000	0.000	0.968	2.384
SM-3 Block IIA Cooperative Development (SCD) - Testing & Evaluation - MD09	MIPR	NSWC/PHD:CA	1.500	0.000		8.895	Nov 2012	0.000		-		0.000	0.000	10.395	13.995
Subtotal			737.968	441.046		399.284		289.817		0.000		289.817			

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			
Subtotal			0.000	0.000		0.000		0.000		0.000		0.000	0.000	0.000	0.000

Remarks
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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>
---	---	--

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	737.968	441.046	399.284	289.817	0.000	289.817			

Remarks
Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, MIPRs, 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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</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
SM-3 BIK IIA DACS Risk Reduction Implementation Decision	▲																											
SM-3 BIK IIA DACS Preliminary Design Review (PDR)	▲																											
SM-3 BIK IIA KW Preliminary Design Review (PDR)		▲																										
SM-3 BIK IIA System Preliminary Design Review (PDR)		▲																										
SM-3 BIK IIA PS Critical Design Review (CDR)						△																						
SM-3 BIK IIA SYS/KW Critical Design Review (CDR)								△																				
Restrained Level Firing						◇																						

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MD09: <i>SM-3 Block IIA Co-Development</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SM-3 Blk IIA DACS Risk Reduction Implementation Decision	1	2012	1	2012
SM-3 Blk IIA DACS Preliminary Design Review (PDR)	1	2012	1	2012
SM-3 Blk IIA KW Preliminary Design Review (PDR)	2	2012	2	2012
SM-3 Blk IIA System Preliminary Design Review (PDR)	2	2012	2	2012
SM-3 Blk IIA PS Critical Design Review (CDR)	2	2013	2	2013
SM-3 Blk IIA SYS/KW Critical Design Review (CDR)	4	2013	4	2013
Restrained Level Firing	2	2013	2	2013

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</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
MT09: <i>SM-3 Block IIA Co-Development Test</i>	-	0.000	0.000	2.303	-	2.303	7.680	26.254	12.768	0.000	0.000	49.005
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

Proving Missile Defense:

Working with the Services' Operational Test Agencies (OTA), with the support of the Director of Operational Test and Evaluation (DOT&E), Missile Defense Agency (MDA) has developed a test program to improve confidence in missile defense capabilities under development and ensure the capabilities transferred to the war fighter are operationally effective, suitable, and survivable.

The Integrated Master Test Plan (IMTP) is event-oriented and extends until the collection of all identified data is completed to ensure adequate test investments. The bottom line is that MDA is focused on conducting meaningful ballistic missile testing that demonstrates the capabilities of the BMDS.

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

	FY 2012	FY 2013	FY 2014
Title: SM-3 Co-Development Testing	0.000	0.000	2.303
Articles:	0	0	0
Description: See Description below.			
FY 2012 Accomplishments:			
- No FY 2012 efforts, funding begins in FY 2014			
FY 2013 Plans:			
- No FY 2013 efforts, funding begins in FY 2014			
FY 2014 Plans:			

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
---	---	---

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
Prepare for and conduct Ballistic Missile Defense System Flight and Ground Test events as reflected in the Integrated Master Test Plan and the Exhibit R-4 schedule.			
Accomplishments/Planned Programs Subtotals	0.000	0.000	2.303

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
• 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
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	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
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	299.012	276.338	129.374		129.374	124.547	51.927	55.808	32.938	Continuing	Continuing

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</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			
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			
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09	MIPR	NSWC:PHD CA	0.000	0.000		0.000		0.900	Nov 2013	-		0.900	Continuing	Continuing	Continuing
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09 - 2012628435314	MIPR	NSWC/DD/VA:Dahlgren, VA	0.000	0.000		0.000		0.400	Nov 2013	-		0.400	Continuing	Continuing	Continuing
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09 - 20126284353142	MIPR	JHU:APL MD	0.000	0.000		0.000		0.400	Nov 2013	-		0.400	Continuing	Continuing	Continuing

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
---	---	---

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			
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09 - 20126284353143	MIPR	NAWC:Pt. Mugu CA	0.000	0.000		0.000		0.500	Nov 2013	-		0.500	Continuing	Continuing	Continuing
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation-MT09 - 20126284353146	MIPR	NSWC:IH MD	0.000	0.000		0.000		0.103	Nov 2013	-		0.103	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		2.303		0.000		2.303			

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

	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	2.303	0.000	2.303			

Remarks
N/A

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>
---	---	---

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

	FY 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
SCD PTV-01 (Aegis Flight Test)									◆																			
SCD CTV-01 (Aegis Flight Test)													◆															
SCD CTV-02 (Aegis Flight Test)															◆													
SFTM-1 E1/E2 (Aegis Intercept Flight Test)																			◆									
FTX-23 (Aegis Flight Test)																			◆									
SFTM-2 (Aegis Intercept Flight Test)																					◆							

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	PROJECT MT09: <i>SM-3 Block IIA Co-Development Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
SCD PTV-01 (Aegis Flight Test)	1	2014	1	2014
SCD CTV-01 (Aegis Flight Test)	2	2015	2	2015
SCD CTV-02 (Aegis Flight Test)	4	2015	4	2015
SFTM-1 E1/E2 (Aegis Intercept Flight Test)	3	2016	3	2016
FTX-23 (Aegis Flight Test)	3	2016	3	2016
SFTM-2 (Aegis Intercept Flight Test)	1	2017	1	2017

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</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>	-	16.483	21.346	16.402	-	16.402	11.204	6.597	2.301	0.000	0.000	74.333
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

In FY 2014, Program Wide Support reflects a proportional change as a result of adjustments to SM-3 Block IIA Co-Development.

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	16.483	21.346	16.402
Articles:	0	0	0
Description: See Description below.			
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	16.483	21.346	16.402

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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</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 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</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 and Support Services	C/CPFF	Various; Multi:AL, CO, VA	0.000	16.483		21.346	Mar 2013	16.402	Mar 2014	-		16.402	Continuing	Continuing	Continuing
Subtotal			0.000	16.483		21.346		16.402		0.000		16.402			

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	16.483	21.346	16.402	0.000	16.402			

Remarks
N/A

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 0604883C: <i>Precision Tracking Space System</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	35.630	75.097	297.375	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	408.102
MD10: <i>Precision Tracking Space System (PTSS)</i>	35.630	73.598	282.283	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	391.511
MD40: <i>Program-Wide Support</i>	-	1.499	15.092	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.591

[#] 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.

FY 2014 reflects termination of the program.

A. Mission Description and Budget Item Justification

Space-based sensors offer on-demand, geographically independent and persistent coverage of areas of specific concern for ballistic missiles with no need for indications and warning. Space-based sensors also expand the battle space of all BMD ships operating in the northern hemisphere with increased raid size handling and threat range capability. With the two Space Tracking & Surveillance System (STSS) demonstration satellites (launched in 2009), the Agency regularly and consistently demonstrated space-based remote sensor and fire control integration, initially in April 2011 in Flight Test Marine (FTM)-15 and most recently in May 2012, in FTM-16 Event 2A. These successes are informing the design, integration, and operations of the Precision Tracking Space System (PTSS).

The PTSS is a space and ground segment system that will provide persistent sensor coverage of enemy ballistic missiles. The PTSS is designed to be an integrated part of the BMDS: one that receives cues from all acquisition sensors and provides outputs to the BMDS battle manager & missile systems. The program mitigates cost, schedule and performance risk by: 1) simplifying the design by focusing on the BMDS mission, 2) incorporating components and subsystems with high technology readiness levels and on-orbit pedigrees and 3) involving industry and the military services up front & early to inform the design for producibility, operations and sustainment.

The PTSS has inherent capability for other missions such as Space Situational Awareness. The Agency expects that capability to be exploited by the joint warfighter when the PTSS is not engaged in a missile defense mission.

The Combatant Commands and Services have a need for a persistent ability to provide fire-control quality tracking of a raid of ballistic missiles over their entire trajectory for both homeland and regional defense scenarios, specifically, improve birth-to-death tracking, identification, and targeting, including the capability to detect, track, discriminate and counter large, dense raids, and structured attacks. Overhead Persistent Infrared (OPIR) systems acquire and track the boost and early post-

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 0604883C: *Precision Tracking Space System*

boost phases of a missile's trajectory, but the PTSS is required to continue to track ballistic missiles through their ascent, apogee, and until they reenter into the earth's atmosphere.

Goals and objectives for the PTSS are:

- Develop an operational missile tracking capability from space, which will close the BMDS fire control loop, specifically the Aegis Ballistic Missile Defense and Ground Based Interceptor weapon systems, by way of the BMDS battle manager.
- Reduce operational, fire control risk by co-locating the national lab design teams for PTSS and Aegis Ballistic Missile Defense, and by embedding US Navy and US Air Force operations and sustainment experts in the PTSS hybrid program office.
- Focus on tracking raids of regional Medium-Range Ballistic Missiles, Intermediate-Range Ballistic Missiles and Intercontinental Ballistic Missiles from today's regional threats.
- Develop and test the development satellite articles and the integrated ground system with the BMDS.
- Ensure early industry involvement by awarding contracts to join the Integrated Systems Engineering Team (ISET) during the development satellite article design. Six Industry partners (Ball, Boeing, Lockheed Martin, Northrop Grumman, Orbital, and Raytheon) contribute to the national lab development effort to improve the Precision Tracking Space System design for manufacturability and reduce the production risk.
- Use data from the on-orbit Space Tracking & Surveillance System (STSS) demonstration satellite testing events
- Benchmark models and simulations.
- Allocate requirements, interface controls, and evaluate operations concepts.
- Leverage experience gained from STSS test events to demonstrate capability and insight into Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance linkages and hand off to the Aegis Ballistic Missile Defense fire control system.
- Develop a government owned design to foster production competition over the life of the program.

The Precision Tracking Space System (PTSS) contributes to defense of the U.S. homeland and regional, missile defense, including large raid protection.

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).

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 0604883C: <i>Precision Tracking Space System</i>
---	---

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	80.723	297.375	267.505	-	267.505
Current President's Budget	75.097	297.375	0.000	-	0.000
Total Adjustments	-5.626	0.000	-267.505	-	-267.505
• 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	-2.123	0.000			
• SBIR/STTR Transfer	-3.503	0.000			
• Other Adjustment	0.000	0.000	-267.505	-	-267.505

Change Summary Explanation

FY 2014 reflects termination of the program.

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</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
MD10: <i>Precision Tracking Space System (PTSS)</i>	35.630	73.598	282.283	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	391.511
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

This Program Element funds the development of a space-borne sensor constellation and ground system that closes the fire control loop with the BMDS shooters, specifically the Aegis Ballistic Missile Defense and Ground Based Interceptor weapon systems, by way of the BMDS battle manager. The PTSS also focuses on tracking large raids of regional Medium-Range Ballistic Missiles, Intermediate-Range Ballistic Missiles and Intercontinental Ballistic Missiles from today's regional threats. As threats expand and mature the need for continuously available sensors and faster interceptors supports continued investment in a PTSS development. Lessons learned from the two Space Tracking & Surveillance System demonstration satellites currently on orbit are guiding our decisions on the development of a fiscally sustainable, continuously available, operational precision track space sensor constellation and ground system.

The PTSS provides the effectiveness of a highly available early missile tracking capability from space by developing, launching and operating a pair of development satellite articles using an integrated ground control system in FY 2017. The PTSS development satellite articles will demonstrate early, precise, real-time tracking of ballistic missiles to close the BMDS fire control loop from space. This capability significantly improves BMDS performance by effectively expanding the threat engagement range of all BMD ships operating in the northern hemisphere.

The PTSS avoids some of the challenges of terrestrial and airborne sensors.

- Provides reliable and constantly available ballistic missile tracking capability in the areas of the world of most concern.
- Eliminates the need for host nation agreements.
- Does not require transport to theater or limit our operational flexibility.
- Mitigates the impacts of weather effects (clouds, crosswinds and icing for airborne, and rain for radar).
- Deals with threats arising from unexpected locations or adversaries.
- Greatly lowers operation and maintenance costs.

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
---	---	---

- Observes and tracks launches beyond the range of airborne and terrestrial sensors.

PTSS supports essential BMDS functions by:

- Continuously observing the U.S. Homeland regional and rogue ballistic missile threat in post-boost.
- Sending fire-control quality tracks to the BMDS shooters, specifically the Aegis Ballistic Missile Defense and Ground Based Interceptor weapon systems, by way of the BMDS battle manager.
- Tracking large raids of nearly simultaneously launched missiles.
- Providing radiometric data supporting challenging post-boost detection requirements, object classification, and hit/kill assessments.
- Adding infrared-based tracking to the existing radio frequency sensors in the architecture for dual phenomenology.
- Providing coverage of the geographic regions and latitudes of concern.
- Contributing modeling and simulation (M&S) emulation models to the BMDS-level M&S environment. The Precision Tracking Space System models, when added to M&S products from other BMDS elements and advanced technology projects, will facilitate trade studies and analyses for Standard Missile-3 Block IIB development.

The PTSS team capitalizes on expertise from external organizations to aid the design process:

- US Air Force. The USAF, as lead service for the PTSS, provides operations and sustainment strategies and concepts to ensure the ground and space segments can be easily transferred to a service. The USAF has embedded its personnel in the PTSS hybrid program office to facilitate this function.
- US Navy. The USN, as operator of the Aegis Ballistic Missile Defense weapon system, is providing assured communications and weapon system expertise so that the PTSS can effectively close the fire control loop from space. To the same end, the USN will embed its personnel in the PTSS hybrid program office.
- Johns Hopkins University Applied Physics Laboratory (JHU/APL). As both the lead performer on the PTSS and design expert for the Aegis Ballistic Missile Defense weapon system, JHU/APL shortens the communications chain by leveraging the co-location of its two design teams. JHU/APL allows the government to manage BMDS interface changes effectively throughout the development articles and maintain intellectual property within the government for future competition.

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

	FY 2012	FY 2013	FY 2014
Title: Precision Tracking Space System	73.598	282.283	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
<ul style="list-style-type: none"> - Completed the requirements and conceptual designs for subsystems in the satellite bus, optical payload and communications payload - Completed conceptual design of the ground entry point; begin procurement and equipment installation to support 2014 segment test - Completed conceptual design of engineering models for satellite bus, optical payload and communications payload - Completed initial test bed approach for the space segment (satellite bus, optical payload and communications payload) - Completed baseline mission trajectory design - Completed preliminary architect-engineer (A-E) design of the PTSS ground segment components necessary to support development article testing - Jointly with the Air Force, evaluated options for warfighter tasking and data processing to take advantage of the inherent capability of PTSS for other missions, such as Space Situational Awareness (SSA) <p>FY 2013 Plans:</p> <ul style="list-style-type: none"> - Characterize and obtain measurements from the breadboard models of the optical tracking and communications payload subassemblies - Complete preliminary design for subsystems in the satellite bus, optical payload and communications payload - Develop initial test beds for system components including command and data handler, communication payload data handler, optical payload data processing unit and communications crosslinks - Complete first-pass of focal plane array (FPA) read-out integrated circuits and detectors; deliver the FPA prototype - Breadboard optical payload sensor cold-box subsystem - Complete primary manufacturing and production readiness studies with the ISET - Complete final Ballistic Missile Defense system test plan for flight and ground elements - Complete PTSS to Command, Control, Battle Management and Communications Interface Control Document(ICD) functional and physical interface definitions (signed ICD) - Complete system preliminary design review - Complete architecture and engineering of PTSS Ground Entry Point (GEP) <p>FY 2014 Plans: N/A</p>				
Accomplishments/Planned Programs Subtotals		73.598	282.283	0.000

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
---	---	---

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>
• 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
• 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
• 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

Remarks

D. Acquisition Strategy

FY 2014 reflects termination of the program.

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</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			
Precision Tracking Space System - Space and Ground Segment	Various	Various:Various	32.066	64.654		263.076	Jan 2013	0.000		-		0.000	0.000	359.796	359.796
Subtotal			32.066	64.654		263.076		0.000		0.000		0.000	0.000	359.796	359.796

Remarks

None.

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

None.

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

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>
---	---	---

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			
Precision Tracking Space System - Contractor Support Services	C/CPFF	MDA:NCR, HSV, CoS	2.562	4.850		13.485	Jan 2013	0.000		-		0.000	0.000	20.897	20.897
Precision Tracking Space System - FFRDC/UARC	MIPR	Aerospace, SDL, JPL:NCR, HSV, CoS	0.000	1.856		1.292	Jan 2013	0.000		-		0.000	0.000	3.148	3.148
Precision Tracking Space System - MDA Civilians	Allot	MDA:Various	0.574	1.563		3.832	Jan 2013	0.000		-		0.000	0.000	5.969	5.969
Precision Tracking Space System - OGA Civilians	MIPR	NRL:Washington, D.C.	0.360	0.360		0.371	Jan 2013	0.000		-		0.000	0.000	1.091	1.091
Precision Tracking Space System - Travel and Transportation	Allot	MDA:NCR, HSV, CoS	0.068	0.315		0.227	Jan 2013	0.000		-		0.000	0.000	0.610	0.610
Subtotal			3.564	8.944		19.207		0.000		0.000		0.000	0.000	31.715	31.715

Remarks
None.

	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	35.630	73.598	282.283	0.000	0.000	0.000	0.000	391.511	391.511

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</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
Optical Payload Study Complete	▲																											
Development Article System Requirements Review-2				▲																								
Technology Development Decision				★																								
Optical Payload Breadboard Subassemblies Complete (KP5)								△																				
Development Article Preliminary Design Review								△																				

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 0604883C: <i>Precision Tracking Space System</i>	PROJECT MD10: <i>Precision Tracking Space System (PTSS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Optical Payload Study Complete	1	2012	1	2012
Development Article System Requirements Review-2	4	2012	4	2012
Technology Development Decision	4	2012	4	2012
Optical Payload Breadboard Subassemblies Complete (KP5)	4	2013	4	2013
Development Article Preliminary Design Review	4	2013	4	2013

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 0604883C: <i>Precision Tracking Space System</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>	-	1.499	15.092	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	16.591
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	1.499	15.092	0.000
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: PTSS program cancelled beginning FY 2014			
Accomplishments/Planned Programs Subtotals	1.499	15.092	0.000

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 0604883C: <i>Precision Tracking Space System</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 0604883C: <i>Precision Tracking Space System</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	Allot	Various; Multi:AL, CA, CO, VA	0.000	0.000		2.970	Jun 2013	0.000		-		0.000	0.000	2.970	0.000
Program Wide Support - Agency Operations and Support Services (CPFF)	C/CPFF	Various; Multi:AL, CO, VA	0.000	1.499		11.927	Oct 2012	0.000		-		0.000	0.000	13.426	0.000
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various; Multi:VA, CO	0.000	0.000		0.164	Mar 2013	0.000		-		0.000	0.000	0.164	0.000
Program Wide Support - Agency Operations and Support Services (MIPR)	MIPR	Deputy Assist Secretary of Army for Policy and Procurement Business Operations and Enterprise System Directorate (DASA (P&P) BO & ESD):VA	0.000	0.000		0.031	Aug 2013	0.000		-		0.000	0.000	0.031	0.000
Subtotal			0.000	1.499		15.092		0.000		0.000		0.000	0.000	16.591	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	0.000	1.499	15.092	0.000	0.000	0.000	0.000	16.591	0.000

Remarks
N/A

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</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	-	0.000	58.742	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	58.742
MD95: <i>Advanced Remote Sensor Technology</i>	-	0.000	55.760	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	55.760
MD40: <i>Program-Wide Support</i>	-	0.000	2.982	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.982

[#] 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

Advanced Remote Sensor Technology was a new Program Element in FY 2013. The Missile Defense Agency (MDA) realigned funds from the Advanced Remote Sensor Technology (ARST) Program Element (PE 0604886C) into the BMD Technology PE (06030175C) to properly align funding and content with the correct Science and Technology Budget Activity (BA), Advanced Technology Development (ATD) (BA03). The internal realignment of ARST funds into the BMD Technology Program will also leverage technology interdependencies and gain oversight efficiencies.

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) is conducting an enhanced discrimination technology demonstration program that will use a wide range of advanced remote sensor technologies and techniques. The goals for enhanced discrimination are to improve the probability of engagement success for stressing threats, expand the Ballistic Missile Defense (BMD) battle space, and increase the ability to negate larger raid sizes. System modeling indicates geographically and spectrally-diverse advanced sensors will improve global persistent tracking and the ability to discriminate by up to an order of magnitude. These improvements increase all weapon systems performance for regional and homeland defense. The advanced remote sensor technology is applicable to space or very-high-altitude basing.

Starting in FY 2014, content previously planned in the Advanced Remote Sensor Technology PE is captured in the BMD Technology PE (0603175C), Project MD25. This content includes maturing emerging advanced detectors, focal planes, and algorithms.

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).

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>
---	--

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	0.000	58.742	35.159	-	35.159
Current President's Budget	0.000	58.742	0.000	-	0.000
Total Adjustments	0.000	0.000	-35.159	-	-35.159
• 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	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	-35.159	-	-35.159

Change Summary Explanation

FY 2014 funding was transferred to the BMD Technology (0603175C) Program Element.

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</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
MD95: <i>Advanced Remote Sensor Technology</i>	-	0.000	55.760	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	55.760
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

Starting in FY 2014, the content planned in the Advanced Remote Sensor Technology (ARST) program will transition to the BMD Technology PE (0603175C). This content includes maturing emerging advanced detectors, focal planes, and algorithms.

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

	FY 2012	FY 2013	FY 2014
Title: Advanced Remote Sensor Technology	0.000	55.760	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments: N/A			
FY 2013 Plans: - Complete advanced sensor data mining - Develop advanced sensor technology - Develop advanced sensor system control algorithms and software - Update models and simulation to reflect advanced sensor system functionality - Begin surrogate advanced sensor integration			
FY 2014 Plans: N/A			
Accomplishments/Planned Programs Subtotals	0.000	55.760	0.000

UNCLASSIFIED

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	MD95: <i>Advanced Remote Sensor Technology</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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</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			
Advanced Remote Sensor Technology - Advanced sensor development, software builds, and advanced sensor integration	C/CPFF	Various:Various	0.000	0.000		15.000	Oct 2012	0.000		-		0.000	0.000	15.000	0.000
Advanced Remote Sensor Technology - Advanced sensor technology development	C/CPFF	Various:Various	0.000	0.000		6.500	Oct 2012	0.000		-		0.000	0.000	6.500	0.000
Advanced Remote Sensor Technology - Advanced sensor technology development and design, control algorithms and software builds	FFRDC	Massachusetts Institute of Technology :Lexington, MA	0.000	0.000		15.959	Oct 2012	0.000		-		0.000	0.000	15.959	0.000
Subtotal			0.000	0.000		37.459		0.000		0.000		0.000	0.000	37.459	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

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
---	--	--

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			
Advanced Remote Sensor Technology - Advanced sensor system test and evaluation	C/CPFF	Massachusetts Institute of Technology:Lexington, MA	0.000	0.000		8.600	Oct 2012	0.000		-		0.000	0.000	8.600	0.000
Subtotal			0.000	0.000		8.600		0.000		0.000		0.000	0.000	8.600	0.000

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			
Advanced Remote Sensor Technology - Program Management	Allot	Missile Defense Agency Other Government Agencies :Various	0.000	0.000		9.701	Oct 2012	0.000		-		0.000	0.000	9.701	0.000
Subtotal			0.000	0.000		9.701		0.000		0.000		0.000	0.000	9.701	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	0.000	0.000	55.760	0.000	0.000	0.000	0.000	55.760	0.000

Remarks
N/A

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</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
Develop advanced sensor technology								▲																				
Advanced sensor component fabrication and laboratory testing					+	+	+	+																				
Advanced sensor test bed integration and demonstrations					+	+	+	+																				
Advanced sensor algorithm and prototype software development					+	+	+	+																				
Acquisition, Pointing, and Tracking Platform characterization and tracking					+	+	+	+																				

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD95: <i>Advanced Remote Sensor Technology</i>
---	--	--

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Develop advanced sensor technology	4	2013	4	2013
Advanced sensor component fabrication and laboratory testing	1	2013	4	2013
Advanced sensor test bed integration and demonstrations	1	2013	4	2013
Advanced sensor algorithm and prototype software development	1	2013	4	2013
Acquisition, Pointing, and Tracking Platform characterization and tracking	1	2013	4	2013

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</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	2.982	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	2.982
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, rents and utilities, data and unified communications support, supplies and maintenance, logistics and central property management of equipment, and similar operating expenses. Also includes legal settlements. In keeping with congressional intent, PWS 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	2.982	0.000
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: FY 2014 plans have been transferred to BMD Technology (0603175C) Program Element			
Accomplishments/Planned Programs Subtotals	0.000	2.982	0.000

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	PROJECT MD40: <i>Program-Wide Support</i>

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks
D. Acquisition Strategy NA
E. Performance Metrics NA

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 0604886C: <i>Advanced Remote Sensor Technology (ARST)</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 and Support Services	Reqn	Various:Multi: AL, CA, CO, VA	0.000	0.000		0.757	Jun 2013	0.000		-		0.000	0.000	0.757	0.000
Program Wide Support - Facilities and Maintenance	MIPR	Various:Multi: AL, CA, CO, VA	0.000	0.000		2.225	Jun 2013	0.000		-		0.000	0.000	2.225	0.000
Subtotal			0.000	0.000		2.982		0.000		0.000		0.000	0.000	2.982	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	0.000	0.000	2.982	0.000	0.000	0.000	0.000	2.982	0.000

Remarks
N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 0305103C: <i>Cyber Security Initiative</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	-	0.000	0.000	0.946	-	0.946	0.961	0.984	1.003	1.022	Continuing	Continuing
MDCS: <i>Cyber Security Initiative</i>	-	0.000	0.000	0.946	-	0.946	0.961	0.984	1.003	1.022	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 increase is to provide funding for the Department of Defense (DoD) Counterintelligence in Cyberspace (CIC) mission at the Missile Defense Agency.

A. Mission Description and Budget Item Justification

The MDA Counterintelligence (CI) Division conducts CI in Cyberspace activities pursuant to DoD Directive O-5240.02 (Counterintelligence) and DoD Instruction S-5240.23 (CI Activities in Cyberspace) to identify, disrupt, neutralize, penetrate, and exploit foreign intelligence services and international terrorist organizations, hereafter referred to as foreign entities, to act in observable or exploitable ways. To this end, the MDA CI Division conducts activities to detect and neutralize foreign entity-directed malicious and insider threat activities targeting MDA administrative and Ballistic Missile Defense fire control networks, and mobility devices.

B. Program Change Summary (\$ in Millions)

	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	0.000	0.000	0.946	-	0.946
Total Adjustments	0.000	0.000	0.946	-	0.946
• 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	0.946	-	0.946

Change Summary Explanation

The FY 2014 increase is to provide funding for the Department of Defense (DoD) Counterintelligence in Cyberspace (CIC) mission at the Missile Defense Agency.

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 0305103C: <i>Cyber Security Initiative</i>	PROJECT MDCS: <i>Cyber Security Initiative</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
MDCS: <i>Cyber Security Initiative</i>	-	0.000	0.000	0.946	-	0.946	0.961	0.984	1.003	1.022	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

The DoD Counterintelligence in Cyberspace (CIC) mission initiative is externally funded and falls under the functional and fiscal management of the Director, Defense Intelligence Agency. The MDA Counterintelligence (CI) Division conducts defensive CIC activities pursuant to DoD Directive O-5240.02 (Counterintelligence), DoD Instruction S-5240.23 (CI Activities in Cyberspace) and DoD Instruction 5240.26 (Countering Espionage, International Terrorism, and the CI Insider Threat), and an MDA Annex within an annual DIA-approved Implementation Plan. In accordance with the aforementioned CI policy references, the MDA CI Division responsibilities include:

- Works closely with the MDA Computer Incident Response Team (CIRT) to detect and neutralize potential foreign entity directed malicious and insider threat activities targeting MDA administrative and fire control networks, and mobility devices.
- Conducts CI Preliminary Inquiries into potential foreign entity directed malicious or insider threat activities and refers suspected incidents or events to the FBI or military department CI organizations for further investigation pursuant to DoD Instruction 5240.21 (CI Inquiries).
- Conducts CI forensics analysis of MDA computer network activity logs to identify potential indicators of foreign entity directed malicious, insider threat or computer network attack/exploitation activities targeting MDA information.
- Coordinates with national and DoD level intelligence, CI and law enforcement agencies to identify foreign entity cyber actor intrusion sets and the tactics, techniques and procedures used to target MDA and its Cleared Defense Contractor computer networks.
- Provides initial and periodic training pursuant to DoD Directive 5240.06 (CI Awareness and Reporting), and DoD Instruction 5240.26 to ensure the MDA workforce is kept apprised of foreign entity threats to DoD personnel, facilities, information, activities, and information technology systems.

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

	FY 2012	FY 2013	FY 2014
Title: DoD CI in Cyberspace Initiative	0.000	0.000	0.946
Articles:	0	0	0
Description: This activity detects, identifies and neutralizes activities directed by foreign entities that target MDA administrative and fire control networks and mobility devices to disrupt or deny services, or collect controlled unclassified information.			

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 0305103C: <i>Cyber Security Initiative</i>	PROJECT MDCS: <i>Cyber Security Initiative</i>
---	---	--

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
<p><i>FY 2012 Accomplishments:</i> N/A</p> <p><i>FY 2013 Plans:</i> N/A</p> <p><i>FY 2014 Plans:</i> - Increase collaboration with MDA Computer Incident Response Team (CIRT) to keep the CIRT fully-informed of current foreign entity intrusion sets and associated tactics, techniques and procedures used to conduct computer network attacks/exploitation activities against MDA networks and mobility devices. -Conduct CI Analysis of MDA computer network activity logs to produce actionable investigative leads indicative of potential foreign entity directed malicious and insider threat activities. -- Conduct CI forensic examinations of MDA computer hardware and mobility devices involved in security or CI incidents to determine potential foreign entity nexus for follow-on investigation by FBI or military department CI organizations. -Integrate CI in cyberspace support to MDA ground and flight test events to detect and neutralize potential foreign entity directed activities targeting MDA personnel, facilities, information and activities.</p>			
Accomplishments/Planned Programs Subtotals	0.000	0.000	0.946

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

<u>Line Item</u>	FY 2012	FY 2013	FY 2014 <u>Base</u>	FY 2014 <u>OCO</u>	FY 2014 <u>Total</u>	FY 2015	FY 2016	FY 2017	FY 2018	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	404.311	362.711	377.605		377.605	406.983	434.661	476.444	601.286	Continuing	Continuing

Remarks

D. Acquisition Strategy
 This project leverages expertise in the intelligence community, counterintelligence community, and information assurance community, including the Military Services, Federally Funded Research and Development Centers (FFRDCs), University Affiliated Research Centers (UARCs), and industry.

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 0305103C: <i>Cyber Security Initiative</i>	PROJECT MDCS: <i>Cyber Security Initiative</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			
DoD CI in Cyberspace Initiative - Counterintelligence	Allot	MDA:Various MDA Locations	0.000	0.000		0.000		0.946		-		0.946	Continuing	Continuing	Continuing
Subtotal			0.000	0.000		0.000		0.946		0.000		0.946			

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	0.946	0.000	0.946			

Remarks
N/A

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</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	-	89.963	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	89.963
MD45: <i>Small Business Innovative Research</i>	-	89.963	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	89.963

[#] 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

This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technologies that can also be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technologies for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technologies will also be judged on their potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technologies, and as a route to national economic growth through new commercial products. MDA will conduct the competition and will award and manage the contracts.

The Missile Defense Agency's SBIR/STTR investments are divided into 14 Research Areas from 5 MDA Elements:

- Aegis Ballistic Missile Defense (BMD): A hybrid program office (MDA/Navy) that builds BMD Capability for use in multi-mission ships and in Aegis Ashore.
- Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR): Defines, develops and deploys an integrated Sensor and Command and Control (C2) capability for Missile Defense
- Program and Integration: Supervises the Acquisition Category ID ACAT 1D Ballistic Missile Defense System Program portfolio including element design, development, system integration, and test.
- Test: Characterizes ballistic missile defense capabilities and supports fielding of an integrated and effective capability to the Warfighter.
- Advanced Technology: Develops cost and operationally effective capabilities; explores and develops technology to counter future threats.

Small Business Innovation Research topic areas for FY 2012 included:

- Combined Radio Frequency/Infrared Data Correlation
- Radio Frequency/Infrared Data Fusion
- Innovative Technologies for High Performance Infrared Detectors
- Novel Planning Algorithms for Hybrid Land and Sea Platform Sensor Coordination

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>	
<ul style="list-style-type: none">-Radar Waveforms to Discern Remote Object Attributes-3G and 4G Communication System Interference Remediation Techniques-Asset Pairing for Battle Management-Radio Frequency/Infrared Data Fusion for Track and Data Correlation-Anti-Tamper Technology for Missile Defense-Techniques for Performing Warhead Characterization-Fast-Running Physics-Based Models for Intercept Debris Aero-heating and Aero-thermal Demise-Modeling High Explosive Detonation Response and Resulting Debris/Shrapnel Generation from Submunitions Warheads-Antenna design in the Plasma Environment-Radio Frequency Material Property Characterization-Advanced Techniques for Lossless Compression of Target Vehicle Telemetry-Modular Hypergolic Leak Detector-Acquisition, Tracking and Pointing Technologies for High Energy Laser Applications-Development of Line-narrowed Diode Pump Sources for Diode Pumped Alkali Laser systems-Optics and Coatings for High Energy Laser Applications-Atmospheric Characterization for Directed Energy Applications-Light weight Rubidium-Metal Vapor Circulating System-Solid State High Energy Laser Batteries and Power Sources-Methodologies for Realtime Correction of Water Vapor Effects on an Infrared Scene-Lightweight Communication Equipment for Interceptor Communications-Miniature Extendable Nozzles or Actuating Nozzles for Improved Specific Impulse of Divert and Attitude Control System\Thrusters-Powdered Propellant Rocket Motor-Waste Heat Recovery of Rocket Motors for Reduction of Battery Weight-Affordable Reinforced Polymer Composite Structures with Embedded Electrical Interfaces-Marking of Components for Avoidance of Counterfeit Parts-Thermal Isolation of Nozzle Exit Cone Insulators-Electro-Optic Infrared Debris Management during ascent phase for Command, Control, Battle Management and Communications-Post Intercept Debris Predictions for Electro-Optic Infrared Scene Modeling-Human-in-Control Modeling-Modeling & Simulation Uncertainty Quantification-High energy laser analysis tool with experimental verification of Diode Pumped Alkali Laser rate constants-Improved Target Discrimination of Multiple Targets Using Bulk Filtering for Debris-Anchoring Post-Intercept Debris Prediction Tools-Detailed Lethality Assessments for Flight Test Events-Innovative designs for reliable Electro-Explosive Ordnance Devices		

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>
--	--

- Long-Term Missile Aging Assessment & Reliability Predictions for Polymer Materials and Electronic Parts
- Cost Effective, Reliable Service Life Extension Testing of Ordnance Devices
- Correlation identification and evaluation of new technologies or methodologies to accurately measure inertial movement in a stressing flight environment
- Materials and Life Cycle Sustainability

B. Program Change Summary (\$ in Millions)	<u>FY 2012</u>	<u>FY 2013</u>	<u>FY 2014 Base</u>	<u>FY 2014 OCO</u>	<u>FY 2014 Total</u>
Previous President's Budget	0.000	0.000	0.000	-	0.000
Current President's Budget	89.963	0.000	0.000	-	0.000
Total Adjustments	89.963	0.000	0.000	-	0.000
• 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	89.963	0.000			
• Other Adjustment	0.000	0.000	0.000	-	0.000

Change Summary Explanation

FY 2012 funds were transferred to Small Business Innovation Research/Small Business Technology Transfer from other Program Elements

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>	PROJECT MD45: <i>Small Business Innovative Research</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
MD45: <i>Small Business Innovative Research</i>	-	89.963	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	0.000	89.963
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

This project explores innovative concepts pursuant to Public Law 106-554 (Small Business Reauthorization Act of 2000) and Public Law 107-50 (Small Business Technology Transfer Program Reauthorization Act of 2001), which mandates a two-phase competition for small businesses with innovative technologies that can also be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technologies for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technologies will also be judged on their potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technologies, and as a route to national economic growth through new commercial products. MDA will conduct the competition and will award and manage the contracts.

The Missile Defense Agency's SBIR/STTR investments are divided into 14 Research Areas from 5 MDA Elements:

- Aegis Ballistic Missile Defense (BMD): A hybrid program office (MDA/Navy) that builds BMD Capability for use in multi-mission ships and in Aegis Ashore.
- Command, Control, Communication, Computer Intelligence Surveillance and Reconnaissance (C4ISR): Defines, develops and deploys an integrated Sensor and Command and Control (C2) capability for Missile Defense
- Program and Integration: Supervises the Acquisition Category ID ACAT 1D Ballistic Missile Defense System Program portfolio including element design, development, system integration, and test.
- Test: Characterizes ballistic missile defense capabilities and supports fielding of an integrated and effective capability to the Warfighter.
- Advanced Technology: Develops cost and operationally effective capabilities; explores and develops technology to counter future threats.

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

	FY 2012	FY 2013	FY 2014
Title: Small Business Innovative Research	89.963	0.000	0.000
Articles:	0	0	0
Description: N/A			
FY 2012 Accomplishments:			

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0605502C: <i>Small Business Innovative Research - MDA</i>	PROJECT MD45: <i>Small Business Innovative Research</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2012	FY 2013	FY 2014
-Awarded 123 Phase Is (\$100K average award) and 91 Phase IIs (including modifications to existing Phase IIs) (\$758K average award). -Phase I Selections were in the following 9 research areas: Command, Control, Battle Management and Communications (C2BMC), Directed Energy, Information Assurance, Interceptor Technology, Manufacturing and Producibility, Modeling Simulation and Phenomenology, Radar Technology, Space Technology, and Innovation Concepts and Special Focus Projects. -Phase II Selections were in the following 9 research areas: Command, Control, Battle Management and Communications (C2BMC), Directed Energy, Information Assurance, Interceptor Technology, Manufacturing and Producibility, Modeling Simulation and Phenomenology, Radar Technology, Space Technology, and Innovation Concepts and Special Focus Projects. FY 2013 Plans: NA FY 2014 Plans: NA			
Accomplishments/Planned Programs Subtotals	89.963	0.000	0.000

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

UNCLASSIFIED

THIS PAGE INTENTIONALLY LEFT BLANK

UNCLASSIFIED

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</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	-	28.824	34.855	37.712	-	37.712	38.580	39.546	40.320	35.325	Continuing	Continuing
MD38: <i>Management Headquarters</i>	-	28.824	34.855	37.712	-	37.712	38.580	39.546	40.320	35.325	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

FY 2014 increase reflects the realignment of requirements to more accurately account for Management Headquarters (HQ) Security, emergency management, contract support services, transportation subsidy, shuttle services, logistics, and ground transportation in the National Capital Region.

A. Mission Description and Budget Item Justification

As prescribed by Department of Defense Directive 5100.73, Major Headquarters (HQ) Activities, signed by the Deputy Secretary of Defense on May 13, 1999, Management Headquarters supports the operation of Missile Defense Agency's (MDA) Headquarters activities. Management Headquarters funds salaries and benefits for government civilian personnel, travel, contract support services, transportation services, facility support functions, emergency management, transportation subsidy, shuttle services, and ground transportation.

Management Headquarters provides oversight of initiatives and processes that minimize future cost overruns, schedule delays, and performance problems in MDA acquisition programs. MDA Headquarters Support is accomplished by focusing acquisition and procurement program management on emphasizing systems engineering; utilizing more effective up front planning and management of technology risk, making trade-offs between cost, schedule, and performance early in the program cycle.

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>
--	---

B. Program Change Summary (\$ in Millions)	FY 2012	FY 2013	FY 2014 Base	FY 2014 OCO	FY 2014 Total
Previous President's Budget	28.908	34.855	25.473	-	25.473
Current President's Budget	28.824	34.855	37.712	-	37.712
Total Adjustments	-0.084	0.000	12.239	-	12.239
• 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	-0.084	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustment	0.000	0.000	12.239	-	12.239

Change Summary Explanation

FY 2014 increase reflects the realignment of requirements to more accurately account for Management Headquarters (HQ) Security, emergency management, contract support services, transportation subsidy, shuttle services, logistics, and ground transportation in the National Capital Region.

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>	PROJECT MD38: <i>Management Headquarters</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
MD38: <i>Management Headquarters</i>	-	28.824	34.855	37.712	-	37.712	38.580	39.546	40.320	35.325	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

Missile Defense Agency (MDA) Headquarters Staff functions (government salaries, government travel, and Contract Support Services) supports the mission of the MDA. Management Headquarters supports the activities by providing utilities and base operations, ground transportation, shuttle services, travel subsidy as well as security and emergency management services.

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

	FY 2012	FY 2013	FY 2014
Title: HQ Civilian Salaries	21.938	23.088	23.290
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: Provide mission support, oversight, and management of: - Acquisition, implementation of international initiatives to increase missile defense coverage to deployed forces and allies, efficiency-oriented administrative services, business operations, financial resources, human capital, real property, environmental compliance, general counsel, internal review, public affairs, and media release			
Title: HQ Travel	1.527	1.781	1.954
Articles:	0	0	0

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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>		PROJECT MD38: <i>Management Headquarters</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)				
		FY 2012	FY 2013	FY 2014
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: Provide mission essential government travel				
Title: HQ Utilities, Facilities, Agency Operations, Subsidy, Transportation and Logistics		1.766	6.455	3.158
		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: - Fund utilities under host-tenant agreement at MDA, Fort Belvoir - Provide base operations at MDA, Fort Belvoir - Provide transportation subsidy to National Capitol Region employees - Provide ground transportation, shuttle, and motorpool services - Decrease from FY 2013 to FY 2014 is a result of modified contracts for shuttle service, ground transportation and motorpool services. In addition, beginning FY 2014, requirements were realigned to Security and Emergency Management and HQ Contract Services Accomplishments				
Title: Security and Emergency Management		0.000	0.000	2.340
		Articles: 0	0	0
Description: N/A				
FY 2012 Accomplishments:				

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 6: <i>RDT&E Management Support</i>		R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>		PROJECT MD38: <i>Management Headquarters</i>
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2012	FY 2013	FY 2014
N/A				
FY 2013 Plans: N/A				
FY 2014 Plans: - Provide access control and circulation enforcement for all visitors, security clearance verification, physical security checks, and information security inspections - Maintain global security situational awareness from the Global Security Operations Center (GSOC) and provide security planning and support for conferences and special events - Provide first response and emergency assessment to emergency situations and respond to alarms to include Sensitive Compartmental Information (SCI) and Special Access Program (SAP) facilities - Beginning in FY 2014, Security Operation requirements were realigned under this accomplishment from HQ Utilities, Facilities, Agency Operations, Subsidy, Transportation and Logistics Accomplishment as well as Budget Project MD40 to more accurately account for Management Headquarters (HQ) activities				
Title: HQ Contract Services		3.593	3.531	6.970
		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: - Provide contract support services to support mission activities for acquisition, business operations, internal review, general counsel, administrative support, public affairs, and international affairs - Beginning FY 2014, contract support service requirements were realigned under this accomplishment from the HQ Utilities, Facilities, Agency Operations, Subsidy, Transportation and Logistics Accomplishment as well as a from Budget Project MD40 to more accurately account for Management Headquarters (HQ) activities				
Accomplishments/Planned Programs Subtotals		28.824	34.855	37.712

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 6: <i>RDT&E Management Support</i>	R-1 ITEM NOMENCLATURE PE 0901598C: <i>Management HQ - MDA</i>	PROJECT MD38: <i>Management Headquarters</i>

C. Other Program Funding Summary (\$ in Millions) N/A
Remarks
D. Acquisition Strategy N/A
E. Performance Metrics N/A