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**Department of Defense
Fiscal Year (FY) 2015 Budget Estimates**

March 2014



Missile Defense Agency

Defense Wide Justification Book Volume 2a of 5

Research, Development, Test & Evaluation, Defense-Wide

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Introduction & Explanation of Contents

The Department of Defense FY2015 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 2015 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

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Defense-Wide
 FY 2015 President's Budget
 Exhibit R-1 FY 2015 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Feb 2014

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

Program Line Element No Number	Item		FY 2013 Act (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base	S e c
---	-----	----	-----	-----	-----	-----	-----	-
31 0603175C	Ballistic Missile Defense Technology		03 69,438	9,321		9,321		U
32 0603176C	Advanced Concepts and Performance Assessment		03	6,919		6,919	8,470	U
33 0603177C	Discrimination Sensor Technology		03	29,642		29,642	45,110	U
34 0603178C	Weapons Technology		03	46,708		46,708	14,068	U
35 0603179C	Advanced C4ISR		03	36,500		36,500	15,329	U
36 0603180C	Advanced Research		03	19,188		19,188	16,584	U
39 0603274C	Special Program - MDA Technology		03 32,926	36,426		36,426	51,033	U
44 0603294C	Common Kill Vehicle Technology		03	70,000		70,000	25,639	U
69 0603901C	Directed Energy Research		03 20,024					U
70 0603902C	Next Generation Aegis Missile		03 58,952					U
	Advanced Technology Development		181,340	254,704		254,704	176,233	
82 0603881C	Ballistic Missile Defense Terminal Defense Segment		04 267,396	255,918		255,918	299,598	U
83 0603882C	Ballistic Missile Defense Midcourse Defense Segment		04 923,506	910,852		910,852	1,003,768	U
85 0603884C	Ballistic Missile Defense Sensors		04 306,896	366,590		366,590	392,893	U
86 0603890C	BMD Enabling Programs		04 336,763	372,309		372,309	410,863	U
87 0603891C	Special Programs - MDA		04 235,272	276,613		276,613	310,261	U
88 0603892C	AEGIS BMD		04 958,506	909,928		909,928	929,208	U
89 0603893C	Space Tracking & Surveillance System		04 45,420	40,347		40,347	31,346	U
90 0603895C	Ballistic Missile Defense System Space Programs		04 5,977	6,515		6,515	6,389	U
91 0603896C	Ballistic Missile Defense Command and Control, Battle Management and Communicati		04 344,431	405,319		405,319	443,484	U
92 0603898C	Ballistic Missile Defense Joint Warfighter Support		04 47,710	42,619		42,619	46,387	U

R-1C1: FY 2015 President's Budget (Published Version), as of February 24, 2014 at 11:47:23

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Defense-Wide
 FY 2015 President's Budget
 Exhibit R-1 FY 2015 President's Budget
 Total Obligational Authority
 (Dollars in Thousands)

24 Feb 2014

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

Line No	Program Element Number	Item	Act	FY 2013 (Base & OCO)	FY 2014 Base Enacted	FY 2014 OCO Enacted	FY 2014 Total Enacted	FY 2015 Base	Section
93	0603904C	Missile Defense Integration & Operations Center (MDIOC)	04	61,684	52,095		52,095	58,530	U
94	0603906C	Regarding Trench	04	8,330	12,464		12,464	16,199	U
95	0603907C	Sea Based X-Band Radar (SBX)	04	23,703	44,478		44,478	64,409	U
96	0603913C	Israeli Cooperative Programs	04	246,881	283,782		283,782	96,803	U
97	0603914C	Ballistic Missile Defense Test	04	438,114	337,993		337,993	386,482	U
98	0603915C	Ballistic Missile Defense Targets	04	438,523	491,170		491,170	485,294	U
109	0604880C	Land-Based SM-3 (LBSM3)	04	243,876	129,374		129,374	123,444	U
110	0604881C	AEGIS SM-3 Block IIA Co-Development	04	416,723	308,493		308,493	263,695	U
111	0604883C	Precision Tracking Space System	04	204,666					U
112	0604886C	Advanced Remote Sensor Technology (ARST)	04	15,596					U
115	0305103C	Cyber Security Initiative	04		946		946	961	U
		Advanced Component Development And Prototypes		5,569,973	5,247,805		5,247,805	5,370,014	
153	0605502C	Small Business Innovation Research - MDA	06	68,858					U
175	0901598C	Management HQ - MDA	06	31,674	34,712		34,712	36,998	U
		Management Support		100,532	34,712		34,712	36,998	
Total Research, Development, Test & Eval, DW				5,851,845	5,537,221		5,537,221	5,583,245	

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32	03	0603176C	Advanced Concepts and Performance Assessment.....	Volume 2a - 13
33	03	0603177C	Discrimination Sensor Technology.....	Volume 2a - 21
34	03	0603178C	Weapons Technology.....	Volume 2a - 31
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44	03	0603294C	Common Kill Vehicle Technology.....	Volume 2a - 63
69	03	0603901C	Directed Energy Research.....	Volume 2a - 71
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83	04	0603882C	Ballistic Missile Defense Midcourse Defense Segment.....	Volume 2a - 123
85	04	0603884C	Ballistic Missile Defense Sensors.....	Volume 2a - 177
86	04	0603890C	BMD Enabling Programs.....	Volume 2a - 225
87	04	0603891C	Special Programs - MDA.....	Volume 2a - 369
88	04	0603892C	AEGIS BMD.....	Volume 2a - 371
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91	04	0603896C	Ballistic Missile Defense Command and Control, Battle Management & Communication.....	Volume 2a - 477
92	04	0603898C	Ballistic Missile Defense Joint Warfighter Support.....	Volume 2a - 533
93	04	0603904C	Missile Defense Integration and Operations Center (MDIOC).....	Volume 2a - 581
94	04	0603906C	Regarding Trench.....	Volume 2a - 617
95	04	0603907C	Sea Based X-Band Radar (SBX).....	Volume 2a - 619
96	04	0603913C	Israeli Cooperative Programs.....	Volume 2a - 633
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110	04	0604881C	AEGIS SM-3 Block IIA Co-Development.....	Volume 2a - 755
111	04	0604883C	Precision Tracking Space System.....	Volume 2a - 775
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Advanced Remote Sensor Technology (ARST)	0604886C	112	04.....	Volume 2a - 789
Advanced Research	0603180C	36	03.....	Volume 2a - 51
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Ballistic Missile Defense Command and Control, Battle Management & Communication	0603896C	91	04.....	Volume 2a - 477
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Ballistic Missile Defense Midcourse Defense Segment	0603882C	83	04.....	Volume 2a - 123
Ballistic Missile Defense Sensors	0603884C	85	04.....	Volume 2a - 177
Ballistic Missile Defense System Space Programs	0603895C	90	04.....	Volume 2a - 453
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Discrimination Sensor Technology	0603177C	33	03.....	Volume 2a - 21
Israeli Cooperative Programs	0603913C	96	04.....	Volume 2a - 633
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Missile Defense Integration and Operations Center (MDIOC)	0603904C	93	04.....	Volume 2a - 581
Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	0603902C	70	03.....	Volume 2a - 77
Precision Tracking Space System	0604883C	111	04.....	Volume 2a - 775
Regarding Trench	0603906C	94	04.....	Volume 2a - 617
Sea Based X-Band Radar (SBX)	0603907C	95	04.....	Volume 2a - 619
Small Business Innovative Research - MDA	0605502C	153	06.....	Volume 2a - 807
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Special Program - MDA Technology	0603274C	39	03.....	Volume 2a - 61
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**Missile Defense Agency
Fiscal Year (FY) 2015
Budget Estimates**

OVERVIEW



Approved for Public Release
14-MDA-7697 (20 February 2014)

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Missile Defense Agency (MDA) Fiscal Year 2015 Budget Overview

The Missile Defense Agency (MDA) is requesting \$7.459 billion in FY 2015 to develop and deploy interceptors, sensors, and command and control, battle management and communications (C2BMC) systems that constitute the Ballistic Missile Defense System (BMDS) to provide U.S. homeland defense and regional missile defense for deployed forces, allies, and friends.

The Agency is requesting a total of \$37.575 billion from FY 2015 to FY 2019, the period of the Future Years Defense Program (FYDP).

The budget protects previously established homeland and regional defense priorities. For Homeland Defense, in response to recent threat developments, the Department increased the planned number of fielded Ground Based Interceptors (GBIs) by 14. MDA will maintain our commitment to build out homeland defenses to 44 GBIs by 2017. In addition we will execute a return to intercept flight test in the third quarter 2014. The focus of the test will be on Ground-based Midcourse Defense (GMD) system reliability and GBI performance.

Last year MDA began refurbishment of Missile Field 1 at Fort Greely, Alaska (FGA) to develop silo capacity to support emplacement of additional GBIs. We continue to emplace GBIs in Missile Field 2 (MF2), conduct GBI component testing, and refurbish currently deployed GBIs to test and improve their reliability.

MDA will continue to acquire GBIs to support GMD operations, testing, and spares and emplace GBIs in MF2 as we progress towards 44 by the end of 2017. MDA continues to fund operations and sustainment of the GMD weapon system with Operation and Maintenance, Defense-Wide funds.

MDA will take additional steps to keep pace with the threats to the U.S. homeland. We have requested \$99.5 million to initiate the redesign of the Exoatmospheric Kill Vehicle (EKV) for GMD. The redesigned EKV will be built with a modular, open architecture and designed with common interfaces and standards, making upgrades easier and broadening our vendor and supplier base. The redesigned

EKV will increase performance to address the evolving threat; improve reliability, availability, maintainability, testability and producibility; and increase in-flight communications to improve usage of off-board sensors information and situational awareness to combatant commanders for enabling new tactics such as shoot-assess-shoot.

The budget also requests \$79.5 million to begin development of a Long Range Discrimination Radar (LRDR). The new LRDR is a mid-course tracking radar that will provide persistent sensor coverage and improve discrimination capabilities against threats to the homeland from the Pacific theater. This new radar also will give the Sea-Based X-band (SBX) radar more geographic deployment flexibility for contingency and test use.

We are also requesting \$122 million for Discrimination Improvements for Homeland Defense (DIHD). This investment will develop and field an integrated set of Element capabilities to improve BMDS engagement reliability, lethality, and discrimination. The combined effects of these investments will be a deployed BMDS architecture more capable of discriminating and killing a reentry vehicle with a high degree of confidence that will dramatically improve BMD System capability and Warfighter shot doctrine while preserving inventory.

For Regional Missile Defense, MDA will continue to focus on threats from Asia-Pacific and the Middle East as we continue to support the European Phased Adaptive Approach (EPAA) to protect our European NATO allies and deployed forces from ballistic missile attacks. The Department met its objectives for EPAA Phase 1 by deploying Aegis Ballistic Missile Defense (BMD) ships in the Mediterranean Sea, a land-based radar in Turkey, and Command, Control, Battle Management, and Communications system node at Ramstein Air Force Base in Germany in 2011. The next two EPAA phases (Phases 2 and 3) include additional Aegis BMD ships (2014-2015) and Aegis Ashore in Romania in 2015 and in Poland in 2018. Aegis Ashore will be capable of launching Standard Missile-3 (SM-3) Block IA, IB, and IIA (delivery in 2018) variants.

Our goal in EPAA Phase 2 is to provide robust capability against Short Range Ballistic Missiles (SRBMs) and Medium Range Ballistic Missiles (MRBMs) by ensuring the system provides multiple opportunities to engage each threat missile in flight. The architecture includes the deployment of the Aegis BMD 4.0 and 5.0 weapon systems with SM-3 Block IBs at sea and at an Aegis Ashore site in Romania. The Romania site is on schedule to be available in 2015.

In support of EPAA Phase 3, the SM-3 Block IIA, which we are co-developing with the Japanese government, and an upgraded version of the Aegis Weapons System are on schedule for deployment in 2018 at the Aegis Ashore sites in Poland and Romania and at sea. The upgraded Aegis Weapons System combined with the faster, longer reaching SM-3 IIA will provide capability to counter more sophisticated threats when compared to the SM-3 IA and IB and will extend coverage to NATO allies in Europe threatened by longer range ballistic missiles.

The MDA is requesting \$435 million to procure 30 Aegis SM-3 Block IB missiles in FY 2015, for a total of 332 SM-3 Block IB missiles. MDA requests \$68.9 million for advance procurement for four long lead items associated with the FY 2016 SM-3 Block IB missile buy to ensure timely delivery to the Combatant Commander. These items include: 1) MK 104 Dual Thrust Rocket Motor, 2) MK 72 Boosters, 3) Integrated Dewar Assemblies and 4) Circuit Card assemblies.

For FY 2015, the MDA is requesting \$464 million for THAAD procurement, which includes the purchase of 31 THAAD interceptors. This puts us on a path for an additional THAAD battery, based on warfighter demand and operational need. We will continue to enhance THAAD's ability to operate through post-intercept debris, enable launch of THAAD's interceptors using sensor data provided by other BMDS sensors, and maintain capability against current and evolving threats.

We will also deploy a second forward-based X-band AN/TPY-2 radar in Japan, improving homeland and regional defense capabilities and increasing our global operational AN/TPY-2 radar posture, and we will build and improve the C2BMC infrastructure at fielded sites.

In addition to continuing the enhancement of global BMD survivable communications and support for operations and sustainment of C2BMC at fielded sites, in FY 2015 we will integrate Overhead Persistent Infrared data into C2BMC to support cueing of BMD sensors worldwide. We will also improve sensor data integration and battle management in C2BMC to support Aegis BMD cueing and launch-on and engage-on remote capability.

We are developing fiscally sustainable advanced BMD technologies that can be integrated into the BMDS to adapt to threat changes. Our investments are focused on technology that brings upgradeable capability to the warfighter. Our advanced technology investments

are determined by systems engineering, which permits us to evaluate and determine which emerging technical solutions will best address gaps in the BMDS and enhance overall BMDS capability and performance. The goals of our investments are to deploy a future BMDS architecture more capable of discriminating and intercepting the reentry vehicle with a high degree of confidence, and to allow warfighters to dramatically improve their shot doctrine.

This budget continues MDA's longstanding commitment in support of Israeli defensive efforts to include the development of the David's Sling Weapon System (DSWS), Upper Tier Interceptor (UTI), Arrow Weapon System Improvements, and procurement of the Iron Dome Weapon System (IDWS). MDA is working with the Israel Missile Defense Organization (IMDO) on these programs to include the delivery of Iron Dome batteries and interceptors and long lead item procurements for (DSWS) and (UTI).

Working collaboratively with independent testers and the Services, MDA follows an Integrated Master Test Plan and continues a flight test program using operationally realistic conditions to demonstrate BMD capabilities against current and emerging threats. Robust testing demonstrates BMDS capability while further enhancing war fighter confidence in the performance of the BMDS.

The FY 2015 budget balances capabilities and risks to: deter aggression, protect the interests of the United States and its allies, respond to warfighter requirements, and pursue cost- and operationally-effective capabilities against future threats. To advance the Administration's missile defense priorities, the FY 2015 MDA's request for BMD programs is \$7.459 billion.

Missile Defense Agency
Fiscal Year 2015-2019 President's Budget
FY 2015 through FY 2019 Appropriation Summary
(\$ Thousands)

Line Number	Program Element	Budget Project	Program	Budget Activity	FY13 Actual	FY14	FY15	FY16	FY17	FY18	FY19	FY15-19
Operations & Maintenance												
011A	0208866C		Operations & Maintenance	NA	221,609	369,371	416,644	421,633	434,974	454,477	459,678	2,187,406
		MD08	Ground Base Midcourse	NA	0	137,776	146,218	150,646	156,822	166,510	168,630	788,826
		MD07	THAAD	NA	37,016	73,632	75,713	71,800	78,192	83,014	84,713	393,432
		MD09	AEGIS	NA	11,050	17,738	11,666	6,242	5,853	6,612	3,640	34,013
		MD11	BMDs AN/TPY-2 Radars	NA	173,543	140,225	183,047	192,945	194,107	198,341	202,695	971,135
			Budget Activity NA Total	NA	221,609	369,371	416,644	421,633	434,974	454,477	459,678	2,187,406
			O&M Total	NA	221,609	369,371	416,644	421,633	434,974	454,477	459,678	2,187,406
Procurement												
NA	0208866C		PROCUREMENT	NA	1,464,168	1,560,174	1,418,620	1,610,424	1,783,210	1,836,205	1,964,757	8,613,216
		MD09	Less: Advanced Procurement (PY)	NA	0	0	0	-68,880	-70,189	-69,819	-88,499	-297,387
28		MD09	AEGIS BMD Advance Procurement (CY)	NA	0	0	68,880	70,189	69,819	88,499	90,180	387,567
		MD09	Proc Cost (Non Add Entry)	NA	0	0	68,880	1,309	-370	18,680	1,681	90,180
29		MD07	THAAD	NA	416,838	571,851	464,424	602,692	533,258	491,026	459,124	2,550,524
30		MD09	AEGIS BMD	NA	463,374	580,814	435,430	740,338	976,716	1,072,682	1,291,465	4,516,631
31		MD11	BMDs AN/TPY-2 Radars	NA	378,574	55,800	48,140	79,224	56,951	6,217	32,587	223,119
32		MD73	Aegis Ashore Phase III	NA	0	131,400	225,774	36,861	63,655	71,600	0	397,890
33		MD77	Radar Spares	NA	10,901	0	0	0	0	0	0	0
34		MD83	Iron Dome	NA	194,481	220,309	175,972	0	0	0	0	175,972
		MD78	Aegis Spares	NA	0	0	0	0	0	20,000	20,000	40,000
		MD08	Ground Based Midcourse	NA	0	0	0	150,000	153,000	156,000	159,900	618,900
			Budget Activity NA Total	NA	1,464,168	1,560,174	1,418,620	1,610,424	1,783,210	1,836,205	1,964,757	8,613,216
			Procurement Total	NA	1,464,168	1,560,174	1,418,620	1,610,424	1,783,210	1,836,205	1,964,757	8,613,216
RDT&E												
31	0603175C		Ballistic Missile Defense Technology	3	69,438	9,321	0	0	0	0	0	0
		MD25	Advanced Technology Development	3	66,024	0	0	0	0	0	0	0
		MD40	Program Wide Support	3	3,414	9,321	0	0	0	0	0	0
32	0603176C		Advanced Concepts and Performance Assessment	3	0	6,919	8,470	10,683	10,867	11,687	11,994	53,701
		MD71	Advanced Concepts and Performance Assessments	3	0	6,919	7,986	10,092	10,201	10,897	11,138	50,314
		MD40	Program-Wide Support	3	0	0	484	591	666	790	856	3,387
33	0603177C		Discrimination Sensor Technology	3	0	29,642	45,110	59,278	60,054	62,897	21,051	248,390
		MC95	Cyber Operations	3	0	168	250	252	255	257	260	1,274
		MD95	Discrimination Sensor Technology	3	0	29,474	42,553	55,748	56,270	57,713	18,886	231,170
		MD40	Program-Wide Support	3	0	0	2,307	3,278	3,529	4,927	1,905	15,946
34	0603178C		Weapons Technology	3	0	46,708	14,068	36,494	46,026	56,037	83,722	236,347
		MD69	Directed Energy Research	3	0	22,944	13,348	34,476	43,203	52,251	77,743	221,021
		MD72	Interceptor Technology	3	0	23,764	0	0	0	0	0	0
		MD40	Program-Wide Support	3	0	0	720	2,018	2,823	3,786	5,979	15,326
35	0603179C		Advanced C4ISR	3	0	36,500	15,329	10,389	3,942	0	0	29,660
		MD01	Communications (C2BMC)	3	0	24,000	0	0	0	0	0	0
		MD73	Advanced C4ISR	3	0	12,500	14,545	9,815	3,700	0	0	28,060
		MD40	Program-Wide Support	3	0	0	784	574	242	0	0	1,600
36	0603180C		Advanced Research	3	0	19,188	16,584	16,715	16,924	18,336	18,723	87,282
		MD25	Advanced Technology Development	3	0	19,188	15,787	15,791	15,886	17,098	17,386	81,948
		MD40	Program-Wide Support	3	0	0	797	924	1,038	1,238	1,337	5,334
39	0603274C		Special Program - MDA Technology	3	32,926	36,426	51,033	9,900	0	0	0	60,933
		MD81	Special Programs - MDA Technology	3	32,926	36,426	51,033	9,900	0	0	0	60,933
44	0603294C		Common Kill Vehicle Technology	3	0	70,000	25,639	33,171	37,348	38,454	54,256	188,868

Line Number	Program Element	Budget Project	Program	Budget Activity	FY13 Actual	FY14	FY15	FY16	FY17	FY18	FY19	FY15-19
		MD85	Common Kill Vehicle Technology	3	0	70,000	24,327	31,337	35,058	35,519	49,595	175,836
		MD40	Program Wide Support	3	0	0	1,312	1,834	2,290	2,935	4,661	13,032
69	0603901C		Directed Energy Research	3	20,024	0	0	0	0	0	0	0
		MD69	Directed Energy Research	3	18,923	0	0	0	0	0	0	0
		MD40	Program-Wide Support	3	1,101	0	0	0	0	0	0	0
70	0603902C		Block IIB (SM-3 IIB))	3	58,952	0	0	0	0	0	0	0
		MD70	Standard Missile-3 Block IIB (SM-3 IIB)	3	54,563	0	0	0	0	0	0	0
		MD40	Program-Wide Support	3	4,389	0	0	0	0	0	0	0
			Budget Activity 03 Total	3	181,340	254,704	176,233	176,630	175,161	187,411	189,746	905,181
82	0603881C		Ballistic Missile Defense Terminal Defense Segment	4	267,396	255,918	299,598	221,008	288,405	286,421	273,365	1,368,797
		MD07	THAAD	4	192,800	215,627	169,162	190,530	205,837	199,622	211,151	976,302
		MC07	Cyber Operations	4	0	530	647	659	671	683	695	3,355
		MT07	THAAD Test	4	61,677	24,540	111,366	15,618	62,579	65,497	40,700	295,760
		MD06	Patriot Advanced Capability-3 (PAC-3)	4	961	1,091	1,082	1,217	1,243	1,267	1,298	6,107
		MD40	Program-Wide Support	4	11,958	14,130	17,341	12,984	18,075	19,352	19,521	87,273
83	0603882C		Ballistic Missile Defense Midcourse Defense Segment	4	923,506	910,852	1,003,768	1,131,060	937,998	690,524	628,342	4,391,692
		MD08	Ground Based Midcourse	4	679,108	759,249	763,354	746,987	551,889	491,651	505,671	3,059,552
		MD97	Improved Homeland Defense (HLD) Interceptors	4	0	0	99,500	264,000	261,500	67,000	13,000	705,000
		MC08	Cyber Operations	4	0	2,124	2,938	2,957	2,997	3,028	3,105	15,025
		MT08	Ground Based Midcourse Test	4	69,419	98,873	79,877	50,667	62,668	82,191	61,695	337,098
		MX08	Ground Based Midcourse Development Support	4	129,644	0	0	0	0	0	0	0
		MD40	Program-Wide Support	4	45,335	50,606	58,099	66,449	58,944	46,654	44,871	275,017
85	0603884C		Ballistic Missile Defense Sensors	4	306,896	366,590	392,893	462,030	448,763	403,272	368,125	2,075,083
		MD11	BMD Radars	4	244,645	288,078	246,290	214,980	184,836	132,872	121,112	900,090
		MD96	Long Rand Disc Radar (LRDR)	4	0	0	50,500	136,300	152,000	145,400	132,000	616,200
		MC11	Cyber Operations	4	0	1,180	1,212	1,247	1,282	1,319	1,352	6,412
		MT11	BMD Radars Test	4	43,953	62,011	71,309	81,782	82,287	96,435	87,372	419,185
		MD40	Program-Wide Support	4	18,298	15,321	23,582	27,721	28,358	27,246	26,289	133,196
86	0603890C		BMD Enabling Programs	4	336,763	372,309	410,863	412,264	400,813	531,752	637,123	2,392,815
		MD24	System Engineering & Integration	4	97,513	100,895	138,825	141,229	113,147	243,670	336,506	973,377
		MT23	Enabling - Test	4	29,288	42,814	22,661	18,897	19,637	19,216	17,299	97,710
		MD28	Intelligence & Security	4	28,627	32,134	40,231	41,283	42,075	43,569	44,690	211,848
		MD30	BMD Information Management Systems	4	97,258	92,411	97,097	95,087	104,976	91,876	93,524	482,560
		MC30	Cyber Operations	4	0	14,431	15,452	15,208	17,762	16,322	16,941	81,685
		MD31	Modeling & Simulation	4	40,832	41,188	41,957	44,489	46,323	50,274	51,262	234,305
		MC31	M&S Cyber Operations	4	0	0	223	229	234	240	246	1,172
		MD32	Quality, Safety, and Mission Assurance	4	28,505	30,115	30,637	31,621	31,541	31,674	32,343	157,816
		MD40	Program-Wide Support	4	14,740	18,321	23,780	24,221	25,118	34,911	44,312	152,342
87	0603891C		Special Programs - MDA	4	235,272	276,613	310,261	412,408	357,545	329,758	272,234	1,682,206
		MD27	Special Programs	4	235,272	276,613	310,261	412,408	357,545	329,758	272,234	1,682,206
88	0603892C		AEGIS BMD	4	958,506	909,928	929,208	955,825	911,095	866,678	721,426	4,384,232
		MD09	Aegis BMD	4	731,847	699,005	756,773	800,557	713,240	630,456	488,962	3,389,988
		MC09	Cyber Operations	4	0	260	265	269	273	279	279	1,365
		MT09	Aegis BMD Test	4	166,697	137,352	89,628	50,934	86,295	117,652	120,869	465,378
		MX09	Aegis BMD Development Support	4	12,094	23,960	28,758	47,911	54,187	59,736	59,797	250,389
		MD40	Program-Wide Support	4	47,868	49,351	53,784	56,154	57,100	58,555	51,519	277,112
89	0603893C		Space Tracking and Surveillance System	4	45,420	40,347	31,346	33,697	34,542	35,317	36,316	171,218
		MD12	Space Tracking and Surveillance System (STSS)	4	42,957	38,223	29,532	31,717	32,377	32,931	33,722	160,279
		MD40	Program-Wide Support	4	2,463	2,124	1,814	1,980	2,165	2,386	2,594	10,939
90	0603895C		Ballistic Missile Defense System Space Programs	4	5,977	6,515	6,389	7,112	7,290	7,454	7,665	35,910
		MD33	MD Space Exp Center (MDSEC)	4	5,727	6,173	6,020	6,695	6,834	6,950	7,117	33,616
		MD40	Program-Wide Support	4	250	342	369	417	456	504	548	2,294

Line Number	Program Element	Budget Project	Program	Budget Activity	FY13 Actual	FY14	FY15	FY16	FY17	FY18	FY19	FY15-19
91	0603896C		Management & Communication	4	344,431	405,319	443,484	456,182	462,525	452,937	465,638	2,280,766
		MD01	Communications (C2BMC)	4	206,874	232,170	269,921	273,114	275,395	260,852	283,287	1,362,569
		MC01	Cyber Operations	4	0	538	547	556	573	583	600	2,859
		MT01	C2BMC Test	4	41,520	54,252	56,237	57,401	52,582	59,577	45,960	271,757
		MX01	Communications (C2BMC) Development Support	4	79,068	96,208	91,111	98,293	104,913	101,175	102,539	498,031
		MD40	Program-Wide Support	4	16,969	22,151	25,668	26,818	29,062	30,750	33,252	145,550
92	0603898C		Ballistic Missile Defense Joint Warfighter Support	4	47,710	42,619	46,387	52,619	53,552	54,699	56,252	263,509
		MD03	Joint Warfighter Support	4	45,208	40,128	14,569	17,144	17,285	17,517	17,912	84,427
		MT03	Joint Warfighter Support Test	4	0	0	29,134	32,383	32,910	33,486	34,323	162,236
		MD40	Program-Wide Support	4	2,502	2,491	2,684	3,092	3,357	3,696	4,017	16,846
93	0603904C		(MDIOC)	4	61,684	52,095	58,530	51,738	61,594	53,885	55,414	281,161
		MD22	(MDIOC)	4	58,658	48,823	54,605	48,216	57,261	49,609	50,805	260,496
		MC22	Cyber Operations	4	0	534	537	482	472	635	651	2,777
		MD40	Program-Wide Support	4	3,026	2,738	3,388	3,040	3,861	3,641	3,958	17,888
94	0603906C		Regarding Trench	4	8,330	12,464	16,199	10,111	9,569	9,937	10,183	55,999
		MD35	Regarding Trench	4	8,330	12,464	16,199	10,111	9,569	9,937	10,183	55,999
95	0603907C		Sea Based X-Band Radar (SBX)	4	23,703	44,478	64,409	57,081	58,975	64,759	63,016	308,240
		MX46	Sea Based X-Band Radar Development Support	4	23,197	42,143	60,681	53,728	55,278	60,385	58,516	288,588
		MD40	Program-Wide Support	4	506	2,335	3,728	3,353	3,697	4,374	4,500	19,652
96	0603913C		Israeli Cooperative Programs	4	246,881	283,782	96,803	103,940	106,020	107,929	110,627	525,319
		MD20	Israeli Upper Tier	4	68,637	74,707	54,368	55,660	56,773	57,795	59,240	283,836
		MD26	Israeli ARROW Program	4	40,753	44,363	10,701	11,142	11,365	11,570	11,859	56,637
		MD34	Short Range Ballistic Missile Defense (SRBMD)	4	137,491	149,712	31,734	37,138	37,882	38,564	39,528	184,846
		MD83	Iron Dome	4	0	15,000	0	0	0	0	0	0
97	0603914C		Ballistic Missile Defense Test	4	438,114	337,993	386,482	340,811	369,920	417,712	413,194	1,928,119
		MT04	BMDs Test Program	4	417,738	318,907	366,186	322,925	349,373	393,123	387,479	1,819,086
		MC04	Cyber Operations	4	0	500	514	523	532	546	560	2,675
		MD40	Program Wide Support	4	20,376	18,586	19,782	17,363	20,015	24,043	25,155	106,358
98	0603915C		Ballistic Missile Defense Targets	4	438,523	491,170	485,294	419,537	512,098	426,085	429,822	2,272,836
		MT05	BMDs Targets Program	4	418,578	464,626	460,455	398,164	484,390	401,560	403,275	2,147,844
		MD40	Program Wide Support	4	19,945	26,544	24,839	21,373	27,708	24,525	26,547	124,992
109	0604880C		Land Based SM-3 (LBSM3)	4	243,876	129,374	123,444	32,641	26,337	22,889	17,825	223,136
		MD68	AEGIS Ashore	4	229,966	117,072	94,999	29,524	24,687	21,343	16,553	187,106
		MC68	Cyber Operations	4	0	242	0	0	0	0	0	0
		MT68	Aegis Ashore Test	4	650	5,130	21,300	1,200	0	0	0	22,500
		MD40	Program-Wide Support	4	13,260	6,930	7,145	1,917	1,650	1,546	1,272	13,530
110	0604881C		AEGIS SM-3 Block IIA Co-Development	4	416,723	308,493	263,695	175,871	67,451	0	0	507,017
		MD09	SM-3 Block IIA Co-Development	4	398,971	289,788	240,751	139,284	50,456	0	0	430,491
		MT09	SM-3 Block IIA Co-Development Test	4	0	2,303	7,680	26,254	12,768	0	0	46,702
		MD40	Program-Wide Support	4	17,752	16,402	15,264	10,333	4,227	0	0	29,824
111	0604883C		Precision Tracking Space System	4	204,666	0	0	0	0	0	0	0
		MD10	Precision Tracking Space System (PTSS)	4	193,137	0	0	0	0	0	0	0
		MD40	Program-Wide Support	4	11,529	0	0	0	0	0	0	0
112	0604886C		Advanced Remote Sensor Technology (ARST)	4	15,596	0	0	0	0	0	0	0
		MD95	Advanced Remote Sensor Technology	4	14,698	0	0	0	0	0	0	0
		MD40	Program-Wide Support	4	898	0	0	0	0	0	0	0
115	0305103C		Cyber Security Initiative	4	0	946	961	984	1,003	1,022	1,048	5,018
		MDCS	Cyber Security Initiative	4	0	946	961	984	1,003	1,022	1,048	5,018
			Budget Activity 04 Total	4	5,569,973	5,247,805	5,370,014	5,336,919	5,115,495	4,763,030	4,567,615	25,153,073
153	0605502C		Small Business Innovative Research - MDA	6	68,858	0	0	0	0	0	0	0
		MD45	Small Business Innovative Research	6	68,858	0	0	0	0	0	0	0
175	0901598C		Management HQ - MDA	6	31,674	34,712	36,998	36,343	35,441	34,675	33,650	177,107

Line Number	Program Element	Budget Project	Program	Budget Activity	FY13 Actual	FY14	FY15	FY16	FY17	FY18	FY19	FY15-19
		MD38	Management Headquarters	6	31,674	34,712	36,998	36,343	35,441	34,675	33,650	177,107
			Budget Activity 06 Total	6	100,532	34,712	36,998	36,343	35,441	34,675	33,650	177,107
			RDT&E Total	6	5,851,845	5,537,221	5,583,245	5,549,892	5,326,097	4,985,116	4,791,011	26,235,361
MILCON												
			Major MILCON	NA	134,459	164,204	0	229,600	85,200	84,000	57,900	456,700
			IFFICS Data Terminal Cmplx, Ft. Drum NY	NA	23,869	0	0	0	0	0	0	0
			Mechanical-Electrical Bldg MF #1 Ft Greely, AK	NA	0	82,000	0	0	0	0	0	0
			BMDs UEUR, Clear AFS, AK	NA	0	17,204	0	0	0	0	0	0
			AN/TPY-2 Radar Site, PACOM	NA	0	15,000	0	0	0	0	0	0
			Aegis Ashore Missile Def Sys Cmplx, Romania	NA	110,590	50,000	0	0	0	0	0	0
			Aegis Ashore Missile Def Sys Cmplx, Poland	NA	0	0	0	162,400	0	0	0	162,400
			Long Range Discrimination Radar	NA	0	0	0	67,200	85,200	84,000	57,900	294,300
			Minor MILCON	NA	0	2,000	2,000	2,000	2,000	2,000	2,000	10,000
				NA	0	2,000	2,000	2,000	2,000	2,000	2,000	10,000
			MILCON Planning and Design	NA	4,191	10,891	38,704	8,042	8,385	8,572	8,836	72,539
				NA	4,191	10,891	38,704	8,042	8,385	8,572	8,836	72,539
			MILCON Total	NA	138,650	177,095	40,704	239,642	95,585	94,572	68,736	539,239
			Program Total		7,676,272	7,643,861	7,459,213	7,821,591	7,639,866	7,370,370	7,284,182	37,575,222

Missile Defense Agency Congressional Reporting Requirements

Reporting Requirement Reference	Reporting Requirement Language	Budget Documentation
<p>Sec 231 of the FY14 National Defense Authorization Act (HR 3304, TITLE II – Subtitle C) pp. 18</p>	<p>SEC 231. IMPROVEMENTS TO ACQUISITION ACCOUNTABILITY REPORTS ON BALLISTIC MISSILE DEFENSE SYSTEM</p> <p>(a) Improvement to Operations and Sustainment Cost Estimates- In preparing the acquisition accountability reports on the ballistic missile defense system required by section 225 of title 10, United States Code, the Director of the Missile Defense Agency shall improve the quality of cost estimates relating to operations and sustainment that are included in such reports under subsection (b)(3)(A) of such section, including with respect to the confidence levels of such cost estimates.</p> <p>(b) Operations and Sustainment Responsibility- Section 225 of title 10, United States Code, is amended by adding at the end the following new subsection:</p> <p>(e) Operations and Sustainment Cost Estimates- The Director shall ensure that each life-cycle cost estimate included in an acquisition baseline pursuant to subsection (b)(3)(A) includes--</p> <p>(1) all of the operations and sustainment costs for which the Director is responsible; and</p> <p>(2) a description of the operations and sustainment functions and costs for which a military department is responsible.'</p> <p>(c) Report-</p> <p>(1) IN GENERAL- Not later than one year after the date of the enactment of this Act, the Director of the Missile Defense Agency shall submit to the congressional defense committees a report outlining the plans of the Director to improve the quality of cost estimates pursuant to subsection (a).</p> <p>(2) ELEMENTS- The report under paragraph (1) shall include--</p> <p>(A) a description of the actions planned to improve the quality of cost estimates included in the acquisition accountability reports on the ballistic missile defense system required by section 225 of title 10, United States Code;</p> <p>(B) the schedule for such planned actions, including the planned schedule for meeting the requirements of subsection (e) of such section 225, as added by subsection (b);</p> <p>(C) a description of any steps taken during the previous year to improve the quality of such cost estimates;</p> <p>(D) an assessment of how the planned improvements compare to the best practices and cost-estimation guidelines recommended by the Comptroller General of the United States for cost estimates of the ballistic missile defense system;</p> <p>(E) any other matters the Director considers appropriate; and</p> <p>(F) the views of the Comptroller General of the United States with respect to the contents of the</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

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	<p>report. (3) FORM- The report under paragraph (1) shall be submitted in unclassified form.</p>	
<p>Sec 234 of H.R. 1960 H. Rpt 113-02 FY14 House Armed Services Committee Report pp. 67-68</p>	<p>REPORT ON IMPROVEMENTS TO ACQUISITION ACCOUNTABILITY REPORTS ON BALLISTIC MISSILE DEFENSE SYSTEM</p> <p>This section would amend section 225 of title 10, United States Code, to include a requirement that the Director, Missile Defense Agency include in the annual Ballistic Missile Defense System Accountability Report certain operation and support costs, and statements as to the quality estimate level of each cost estimate as well as the steps the Director will take to ensure these estimates reach the “high-quality estimate” level established by the Comptroller General of the United States.</p> <p>(a) In General.—Section 225 of title 10, United States Code, is amended— (1) in subsection (b)(3)(A), by inserting “comprehensive” before “life-cycle”; and (2) by adding at the end the following: (e) Quality of Cost Estimates.—(1) The Director shall ensure that each cost estimate included in an acquisition baseline pursuant to subsection (b)(3) includes all operation and support costs, regardless of funding source, for which the Director is responsible. (2) In each such baseline submitted to the congressional defense committees, the Director shall state whether the underlying cost estimates in such baseline meet the criteria of the Comptroller General of the United States to be considered a high-quality estimate. If the Director states that such estimates do not meet such criteria, the Director shall include in such baseline the actions, including a schedule, that the Director plans to carry out for the estimates to meet such criteria.” (b) Report.—Not later than February 15, 2014, the Director of the Missile Defense Agency shall submit to the congressional defense committees a report of the plans and schedule of the Director with respect to when the Director will meet the quality and criteria of cost estimates required by section 225(e) of title 10, United States Code, as added by subsection (a)(2).</p>	<p>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>
<p>Section titled "Report on Fragility in the Missile Defense Industrial Base" of the FY13 National Defense Authorization Act (HR 4310, TITLE II – Research,</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 Subcommittee 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 the</p>	<p>MDA to provide report prior to the 2015 budget request.</p>

Missile Defense Agency Congressional Reporting Requirements

<p>Development, Test, And Evaluation) pp. 100-101</p>	<p>supplies, as we were discussing before, it's the manufacturing processes. And, a lot of these components that we use, and 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>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: 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>MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.</p>

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- (A) engineering and manufacturing development; and
- (B) production and deployment.
- (3) Except as provided by subsection (d), the Director may not adjust or revise an acquisition baseline established under this section.
- (b) ELEMENTS OF BASELINES.—Each acquisition baseline required by subsection (a) for 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—

Missile Defense Agency Congressional Reporting Requirements

	<p>(i) any new acquisition baselines required by subsection (a) for a program element or 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: section 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 – 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.</p> <p>(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.</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>(c) Repeal of Superseded Reporting Authority- Section 232 of the National Defense Authorization</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

	Act for Fiscal Year 2002 (Public Law 107-107; 115 Stat. 1037; 10 U.S.C. 2431 note) is amended by striking subsection (g).	
H. Rpt. 110-279, the House Appropriations Committee Report to accompany the FY 2008 Department of Defense Appropriations Act (H.R. 3222), p. 382	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.	MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR fully satisfies the requirement.
<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>	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.	MDA to provide BMDS Accountability Report (BAR) to Congressional Defense Committees. The BAR partially satisfies the requirement through its schedule baseline. Exhibit P-21 – Budget Production Schedule Procurement -MDA 0208866C , Terminal Defense, 0208866C , Aegis BMD, 0208866C , BMD Sensors 0208866C , Aegis Ashore Phase III
<i>Sec 223(b). Ballistic Missile Defense</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	Procurement -MDA 0208866C , Terminal Defense,

Missile Defense Agency Congressional Reporting Requirements

<p><i>Programs: Procurement;</i> National Defense Authorization Act for Fiscal Year 2004 (H.R. 1588, H. Rpt. 108-354, pp. 30-31)</p>	<p>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.</p>	<p>0208866C, Aegis BMD, 0208866C, BMD Sensors 0208866C, Aegis Ashore Phase III</p>
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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.

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ACRONYMS AND ABBREVIATIONS

A	
A&S	Advisory and Assistance Services
AAEA	Aegis Ashore Engineering Agent
AAFTM	Aegis Ashore Flight Test Mission
AAMDS	Aegis Ashore Missile Defense System
AAMDSC	Aegis Ashore Missile Defense System Complex
AAMDTC	Aegis Ashore Missile Defense Test Complex
AAW	Anti-Air Warfare
ABEWS	Airborne Early Warning System
ABIR	Airborne Infrared Radar
ABMD	Aegis Ballistic Missile Defense
ABS	Airborne Sensors; American Bureau of Shipping
ABWO	Assistant Ballistic Missile Defense Watch Officer
ACB	Advanced Capability Build
ACB 12	Advanced Capability Build 12
ACD	Adversary Capability Document
ACD&P	Advanced Component Development & Prototypes
ACL	Achievable Capabilities List
ACS	Aegis Combat System
ADP	Arrow Deployability Program; Automated Data Processing; Adversary Delta Package
AEDC	Arnold Engineering Development Center
AEI	Annual Integration Events
AEP	Analysis Execution Plans
AEU	Antenna Equipment Unit
AFB	Air Force Base
AFS	Avionics Flight Software
AI&T	Assembly, Integration and Test
AIE	Annual Integration Event
ALO	Aegis Light-Off
ALTB	Active Layered Theater Ballistic
AMCOM	Army Aviation and Missile Command
AMDWS	Air and Missile Defense Workstation
AMOD	Aegis Modernization (program)
AMRDEC	Aviation and Missile Research, Development and Engineering Center
	Joint Army-Navy equipment nomenclature: S -Water (surface ship), P - Radar, Y - Surveillance (target detecting and tracking) and Control (fire control and/or air control), 1 - model number [AN/SPY-1 is an equipment nomenclature, not an Acronym]
AN/SPY-1	
AN/TPY	Army Navy/Transportable Radar Surveillance
	Joint Army-Navy equipment nomenclature: T - Transportable (ground), P - Radar, Y - Surveillance (target detecting and tracking) and Control (fire control and/or air control), 2 - model number [AN/TPY-2 is an equipment nomenclature, not an Acronym]
AN/TPY-2	
AOC	Air Operations Center
AOR	Area of Responsibility
APEX	Assessment Parameter Extraction
APL	Applied Physics Laboratory
ARAV	Aegis Readiness Assessment Vehicles
ARST	Advanced Remote Sensor Technology
ARSTRST	(US) Army Forces Strategic Command
ASIP	Arrow System Improvement Program; Application Specific Integrated Circuit
AT&L	Acquisition, Technology and Logistics
ATD	Advanced Technology Development; Assistant to the Director
ATEC	Army Test and Evaluation Command

ACRONYMS AND ABBREVIATIONS

ATK	Alliant Techsystems, Inc
AUR	All Up Round
AWS	Arrow Weapon System; AEGIS Weapon System
B	
BCA	Business Case Analysis; BMDS Capability Assessment
BCF	BCF Solutions, Incorporated
BCM	C2BMC model
BCN	BMDS Communications Network
BCSC-T	BMDS Communication System Complex Transportable
BDR	BMDS Discrepancy Reports
BER	Baseline Execution Reviews
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
BOD	Boards of Director
BORRS	BMDS Operational Readiness Reporting System
BOS	Base Operations Support
BSA	Budget Sub-Activity
BSC	Battery Support Center
BSO	BMDS Safety Officers
BSP	BMD Signal Processor
BTG	BCN Teleport Gateway
BWO	BMDS Watch Officers
C	
C&A	Certification and Accreditation
C/FFP	Cost Fixed Firm Price
C2BMC	Command and Control, Battle Management, and Communications
C2P	Command and Control Processor
C4I	Command, Control, Communications, Computers and Intelligence
CAFM	Computer-aided Facilities Management
CARD	Cost Analysis and Requirements Document
CBAU	Consolidated Booster Avionics Upgrade
CCAS	Combat Capabilities Assessment Schedule
CCC	C2BMC Control Center
CCLS	Centralized Contractor Logistics Support
CCM	Counter Counter-Measures
CCMD	Combatant Commander
CD	Concept Descriptions; Cobra Dane
CDCS	Coherent Doppler Collection System
CDIN	C2BMC Deployable Interface Node
CDLMS	Common Data Link Monitoring System
CDR	Critical Design Review
CDU	Cobra Dane Upgrade
CE	Capability Enhanced
CEC	Critical Engagement Condition
CECOM	US Army Communications & Electronics Command
CENAU	Corps of Engineers European Division
CENTCOM	[US] Central Command
CEU	Cooling Equipment Unit
CG	US Navy ship hull classification symbol for - Guided Missile Cruiser [CG is not an Acronym]
CIC	Counterintelligence in Cyberspace
CIDS	Critical Items Description Specifications
CIIA	Cyber, Identity, and Information Assurance
CIRT	Computer Incident Response Team
CLE	Command and Launch Equipment

ACRONYMS AND ABBREVIATIONS

CLS	Contractor Logistics Support
CND	Computer Network Defense
CNET	Classified Network
COCOM	Combatant Commanders
COMNET	communications network
COMSEC	Communication Security
CONOPS	Concept of Operations
CONPLAN	Concept Plan
CONPLANS	Contingency Plans
CONUS	Continental United States
COOP	Calibrated Orbiting Objects Program (COOP)
Cos	Colorado Springs
COTS	Commercial off the Shelf
CP	Computer Program
CPAF	Cost Plus Award Fee
CPCR	Computer Program Change Request
CPFF	Cost Plus Fixed Fee
CPIF	Cost-Plus-Incentive-Fee
CPRS	Computer Program Requirements Specifications
CR	Capability Release
CSC	Computer Sciences Corporation
CSCS	Center for Surface Combat Systems
CSEDS	Combat Systems Engineering Development Site
CSS	Contractor Support Services
CTM	Core Truth Models
CTTO	Concurrent Test, Training and Operations
CTV	Control Test Vehicle
CTV-01	Controlled Test Vehicle-01
CU	Capability Upgrade
CVT	Controls Validation Testing
CY	Calendar Year
D	
DAA	Designated Approving Authority
DAA	Defense Appropriations Act; Designated Approving Authority
DAC	Divert Attitude Control
DACS	Divert and Attitude Control System
DARPA	Defense Advanced Research Projects Agency
DASA	German Aerospace. Member of the MEADS Program Team.
DAU	Defense Acquisition University
DDCS	Digital Data Collection System
DDG	US Navy ship hull classification symbol for - Guided Missile Destroyer [DDG is not an
DECC	Defense Enterprise Computing Center
DEERS	Defense Enrollment Eligibility Reporting System
DESH	MDA/DESH - Missile Defense Agency (MDA)/Modeling & Simulation Huntsville (DESH)
DESIM	[office symbol within MDA Engineering Directorate, not an Acronym]
DFAR	Discrete Event Simulation
DHP	Defense Federal Acquisition Regulation
DIA	Data Handling Plan
DIACAP	Defense Intelligence Agency
DIA	DOD Information Assurance Certification and Accreditation Process; DOD Information Assurance Certification and Accreditation Program
DISA	Defense Information Systems Agency
DMETS	Distributed, Multi-Echelon Training System
DMIC	Digital M&S Integration Center
DMS	Diminished Manufacturing Support
DoD	Department of Defense
DODIC	Department of Defense Identification Code

ACRONYMS AND ABBREVIATIONS

DOT&E	Director of Operational Test and Evaluation
DPALS	Diode Pumped Alkali Laser System
DPF	MDA Facilities, MILCON & Environmental Management Directorate
DREN	Defense Research Engineering Network
DRSN	Defense Red Switch Network
DSA	Digital Simulation Architecture
DSCS	Defense Satellite Communication System
DSWS	David's Sling Weapon System
DT&E	Developmental Test and Evaluation
DTIC	Digital Test and Integration Center
DTLOMS	Doctrine, Training, Leadership, Organization, Materiel, Soldier
DTRA	Defense Threat Reduction Agency
DW	Defense Wide
DWCF	Defense Working Capital Fund
E	
E/CCA	Element/Component Characteristics for Analysis
EA	Executing Agent; Engineering Assessment
EADSIM	Extended Air Defense Simulation
EAS	Eareckson Air Station
ECS	Element Capability Specification; Engineering Change Summary
EDP	Evolutionary Development Program
EECS	Event Execution Control System
EEU	Electronics Equipment Unit
EHF	Extremely High Frequency
EKV	Exoatmospheric Kill Vehicle
E-LRALT	Enhanced Long Range Air Launch Target
EMD	Engineering, Manufacturing, and Development
EMDR	Executive Mission Data Review
EME	Empirical Measurement Events
eMRBM	Extended Medium Range Ballistic Missile
EMRL	Engineering and Manufacturing Readiness Level
EO/IR	Electro-Optical/Infrared
EoR	Engage-on-Remote
EPAA	European Phased Adaptive Approach
EQLB	Executive Quick Look Briefing
ESD	Enterprise System Directorate
ESI	External System Interface; Enterprise Software Initiative
ESL	External Sensors Lab
ESOH	Environmental, Safety and Occupational Health
ET	Embedded Test;
EUCOM	European Command
EVMS	Earned Value Management System
EWB	Early Warning Radar
EWS	Enterprise Work Stations
F	
FCS	Fire Control Section; Fire Control System (SPY/FCS - AN/SPY radar Fire Control System)
FDE	Force Developers Evaluation
FFP	Firm Fixed Price
FFPLOE	Firm Fixed Prices Level of Effort
FFRDC	Federally Funded Research and Development Center
FISMA	Federal Information Security Management Act
FLITES	Fast Line-of Sight Imagery for Target and Exhaust Plume Signatures
FMA	Foreign Material Acquisition; Foreign Military Asset
FMS	Foreign Military Sales
FOCI	Foreign Ownership, Control, and Influence
FOIA	Freedom of Information Act
FPA	Focal Plane Array

ACRONYMS AND ABBREVIATIONS

FPAF	Fixed Price Award Fee
FPIF	Fixed Price Incentive Fee
FT	Flight Test
FTF	Flexibility Target Family
FTG	Flight Test GMD
FTM	Flight Test Mission
FTO-02	Flight Test Operational-02
FTT	Flight Test - THAAD
FY	Fiscal Year
FYDP	Future Years Defense Program
G	
GBI	Ground Based Interceptor
GBR-P	Ground Based Radar Prototype
GCC	Geographic Combatant Commander
GCCS-M	Global Command and Control System - Maritime
GCN	Global Command Network; GMD Communications Network
GD	Global Deployment
GDDT	Government Directed Down Time
GEM	Global Engagement Manager; Guidance Enhancement Missiles (PATRIOT)
GENSER	General Services
GEOINT	Geospatial Intelligence
GEP	Ground Entry Point
GFC	GMD Fire Control
GFC / C	GMD Fire Control and Communications
GFE	Government Furnished Equipment
GFS	Government Furnished Services
GIG	Global Information Grid
GM	Ground-based Midcourse
GMD	Ground-based Midcourse Defense
GPS	Global Positioning System
GS	Ground Systems
GSOC	Global Security Operations Center
GT	Ground Test
GTD	Ground Test Distributed
GTI	Ground Test Integrated
GTRI	Georgia Tech Research Institute
GTX	Ground Test (Element to Element)
GWS	GEM Work Stations

ACRONYMS AND ABBREVIATIONS

H	
HAENS	High Altitude Exoatmospheric Nuclear Survivability
HEMP	High Altitude Electromagnetic Pulse
HEMTT	Heavy Expanded Mobility Tactical Truck
HILL	Human-in-the-Loop; Hardware-in-the-Loop
HMOC	Huntsville Mission Operations Center
HOSC	Huntsville Operations Support Center
HRTS	Human Resource Tracking System
HWIL	Hardware-in-the-loop
I	
I&T	Integration & Test
IA	Information Assurance
IAI	Israel Aircraft Industries
IAM	Information Assurance Manager
IAMD	Integrated Air and Missile Defense
FPAF	Fixed Price Award Fee
IAS	Interocean American Shipping
IAW	In Accordance With
ICBM	Intercontinental Ballistic Missiles
ICD	Interface Control Document
ICOFT	Institutional Conduct of Fire Trainer
ICP	Interface Change Proposal
IDIQ	Indefinite Delivery Indefinite Quantity
IDMP	Integrated Data Management Plan
IDT	In-Flight Interceptor Communications System Data Terminal
IEM	Integrated Electronics Module
IETM	Integrated Electronic Technical Manual
IETT	Integrated Event Test Team
IFCS	In-Flight Interceptor Communications System
ILP	Initial Lot Production
ILS	Integrated Logistics Support
IM	Insensitive Munitions
IMAP	Integrated Master Assessment Plan
IMD	Integrated Missile Defense
IMoD	Israeli Ministry of Defense
IMTP	Integrated Master Test Plan
IMU	Inertial Measurement Unit
IMVP	Integrated Master VV&A Plan
INFOSEC	Information Security
IPA	Intergovernmental Personnel Act
IR	Infra-red
IRBM	Intermediate-Range Ballistic Missiles
ISA&I	Israeli System Architecture and Integration
IS&I	Integrated Systems Engineering Team
ISIM	International Simulation
IT	Integrated Test; Information Technology
ITB	Institutional Training Base; Israeli Test Bed
IV&V	Independent Verification and Validation
IWS	Indications and Warning System; Integrated Warfare Systems
J	
JAT	Joint Analysis Teams
JBTEC	Joint BMDS Training and Education Center
JEWL	Joint Early Warning Laboratory
JFCC	Joint Functional Component Command
JFCC-IMD	Joint Functional Component Command - Integrated Missile Defense
JHU	John Hopkins University

ACRONYMS AND ABBREVIATIONS

JHU/APL	John's Hopkins University/Applied Physics Laboratory
JMOD	Japan Ministry of Defense
JNIC	Joint National Integration Center, Schriever AFB, CO
JPOW	Joint Project Optical Windmill
JRDC	JNIC) Research and Development Contract
JRMET	Joint Reliability and Maintainability Engineering Team
JTF-GNO	Joint Task Force-Global Network Operations
JTIDS	Joint Tactical Information Data System
JTOC	JNIC Target Operations Center
JWSP	Joint Warfighter Support Program
K	
KHILS	Kinetic Kill Vehicle hardware in-the-Loop Simulator
KIDD	Kinetic Impact Debris Distribution
KV	Kill Vehicle
KW	Kinetic Warhead
L	
L&TSE	Launch and Test Support Equipment
LBSM3	Land Based SM-3 (early name for Aegis Ashore)
LCC	Launcher Control Center
LHCT	Long Haul Communications Transport
LLNL	Lawrence Livermore National Laboratory
LM	Lockheed Martin
LMSSC	Lockheed Martin Space Systems Company
LNO	Liaison Officer
LoR	Launch on Remote
LRDS	Long Range Detection Suite
LRSS&T	Long Range Surveillance and Tracking; Long Range Surveillance and Track
LRU	Line Replaceable Unit'
LSC	Launch Support Systems;
LSE	Launch Support Equipment
LSS	Launch Support Systems; Launch Site Controller
LTPO	Lower Tier Program Office
M	
M&S	Materials and Structure: Modeling and simulation
MAIS	Major Automated Information System
MAP	MDA Assurance Plan; MDA Assurance Provisions
MAR	MDA Assurance Representative
MARAD	Maritime Administration
MASINT	Measures and Signals Intelligence
MAX/MIF	Maximum (number of)/Missiles In Flight
MD	Missile Defense
MDA	Missile Defense Agency
MDAHQ	Missile Defense Agency Headquarters
MDAP	Major Defense Acquisition Program
MDEB	Missile Defense Executive Board
MDIOC	Missile Defense Integrated Operations Center
MDR	Mission Data Review
MDSDC	Missile Defense Space Development Center
MDSE	Missile Defense System Exerciser
MDSEFC	Missile Defense Space Experimentation Center
MDST	Missile Defense Space Warning Tool
MET	Modernization Enterprise Terminal
MFRL	Modification and Fielding Request List
MFU	Missile Firing Unit
MICS	MDA Integrated Communications Services
MIDAESS	Missile Defense Agency Engineering and Support Services

ACRONYMS AND ABBREVIATIONS

MIF	MIF
MILCON	Military Construction; Military Construction funding (type of Appropriation)
MIL-STD	Military Standards
MIP	Master Integration Plan
MIPR	Military Interdepartmental Purchase Request
MIS	MDSDC Interchange System; MDSEC Interchange System
MIT	Miniature Interceptor Technology; Massachusetts Institute of Technology
MIT/LL	Massachusetts Institute of Technology, Lincoln Laboratory, Lexington, MA
MMR	Multi-Mission Radar
MOC	Missile Defense Agency Operations Center
MokVA	Modular open Kill Vehicle Architecture
MOU	Memorandum of Understanding
MPAT	Producibility and Manufacturing Technology
MPL	ManPower Loading
MRA	Mission Readiness Assessment
MRBM	Medium-Range Ballistic Missiles
MRT	Medium Range Target
MRTF	Major Range and Test Facilities
MSR	Minimum Sustaining Rate
MTOE	Modified Table of Organization and Equipment
MTS	Multi-Spectral Targeting System
N	
NASIC	National Air and Space Intelligence Center
NATO	North Atlantic Treaty Organization
NAVFAC	Naval Facilities Engineering Command; Naval Facility
NAVSEA	Naval Sea Systems Command
NAWC	Naval Air Warfare Center
NCR	National Capital Region
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NFIRE	Near Field Infrared Experiment
NGAS	Northrop Grumman Aerospace Systems
NGST	Northrop Grumman Space Technology
NIPRNET	Non-Secure Internet Protocol Router Network
NIST	National Institute of Standards and Technology
NORAD	North American Aerospace Defense Command
NORTHCOM	Northern Command
NRE	non-recurring engineering
NRL	Naval Research Laboratory, Washington, DC
NRT	Navy Review Team
NSA	National Security Agency
NSWC	Naval Surface Warfare Center
NTD	Near-Term Discrimination
O	
O&M	Operations and Maintenance
O&S	Operations and Sustainment
OA	Open Architecture
OCO	Overseas Contingency Operations
OCONUS	Outside of CONUS
OGA	Other Government Agency
OMB	Office of Management and Budget
ONIR	Overhead Non-Imaging Infra-Red
OPIR	Overhead Persistent Infrared
OPLAN	Operations Plan
OPSCAP	Operations Capabilities
OPTSIG	Optical Signatures In-Line Generator
ORNL	Oak Ridge National Laboratory

ACRONYMS AND ABBREVIATIONS

OSA	Open Systems Architecture
OSC	Operations Support Center
OSD	Office of the Secretary of Defense
OSF	Objective Simulation Framework
OSFC	Operations Forces Standing Committee
OSM	Object Sighting Message; Open Systems Architecture Sensor Models
OSPT	Operations Support Planning Team
OSS	Off-Shore Support; Optimistic Sensor Model
OTA	Operational Test Agencies
P	
P&P	Policy and Procurement
PA	Performance Assessments; Project Arrangement
PAA	Phased Adaptive Approach
PAC-3	Patriot Advanced Capability-3
PACOM	U.S. Pacific Command
PAM	Planning Allocation Matrix
PB	President's Budget
PBL	Performance Based Logistics
PCO	Procurement Contracting Office
PDR	Preliminary Design Review
PDSS	Post Deployment Software Support
PE	Program Element
PEELS	Parametric Endo/Exo-atmospheric Lethality Simulation
PEGEM	Post Engagement Ground Effects Model
PEO IWS	Program Executive Office - Integrated Warfare Systems
PFR	Post Flight Reconstruction
PHACIL	Phacil, Incorporated
PIDS	Prime Item Development Specifications
PLET	Phenomenology, Lethality, Environment, Threat
PLT	Production Lead Time
PLUS	Plume Simulation
PM	Program Manager
PM/AM	Program Manager/Information Assurance Manager
PMAP	Process Mission Assurance Plan
PMDCATS	Program Manager - Communications and Transmission Systems
PME	Primary Mission Equipment
PMI	preventative maintenance inspection
PMP	Parts, Materials and Processes
PMRF	Pacific Missile Range Facility, Barking Sands, Kauai, HI
PMT	Pre-Mission Test
POA&M	Plan of Action and Milestones
POC	Point of Contact
PPR	Pre-Planned Responses
PPU	Prime Power Unit
PROCAP	Protection Capability
PSEM	Patriot System Effectiveness Model
PSN	Parallel Staging Area
PTSS	Precision Tracking Space System
PWS	Program-Wide Support
Py	Prior Year
Q	
QLB	Quick Look Briefing
QoS	Quality of Service
QRT	Quick Response Team
Q SMA	Quality Safety and Mission Assurance
R	

ACRONYMS AND ABBREVIATIONS

RAFU	Radar Field Upgrade
RAM	Reliability, Availability and Maintainability
RASP	Rapid Scenario Prototype
RCS	Radar Cross Section
RDEC	Research, Development, and Engineering Center
RDECOM	Research, Development, Engineering Command
RDt&E	Research, Development, Test & Evaluation
RF	Radio Frequency
RFA	Requests for Analysis
RFARFI	Request for Analysis Request for Information
RFI	Requests for Information
RFP	Request for Proposal
RMOET	Radar March Order & Emplacement Trainer
ROI	return on investment
RPFM	Rocket Plume Flowfield Model
RSC	Radar Sustainment Contract
RSO	Resident Space Object
RTI	Return to Intercept
RTS	Ronald Reagan Test Site, Kwajalein, Marshall Islands
RV	Reentry Vehicle
S	
SATCOM	Satellite Communications
SBIR	Small Business Innovative Research
SBIR/STTR	Small Business Innovative Research/Small Business Technology Transfer
SBIRS	Space Based Infrared System
SBT	Sea Based Terminal
SBX	Sea Based Test X-Band Radar
SCD	SM-3 Cooperative Development; Standard Missile-3 Cooperative Development (Program)
SCG	Security Classification Guides
SCN	System Change Notices
SCR	SM-3 Cooperative Development; System Capability Review
SCRm	Supply Chain Risk Management
SDACS	Solid Divert Attitude Control System
SDD	System Description Document
SDL	Space Dynamics Laboratory
SDR	System Design Review; Software Design Review
SE&I	Systems Engineering and Integration
SEI	Systems Engineering & Integration
SEAR	System Engineering Assessment Report
SED	Software Engineering Design
SEPM	System Engineering Program Management
SGP	Super Green Pine
SIAO	Senior Information Assurance Officer
SIAO/CA	Senior Information Assurance Officer (SIAO)/Certification Authority (CA)
SIGNIT	Signal Intelligence
SIM	Simulation
SIPRNET	Secret Internet Protocol Router Network
SIU	SSF Interface Unit
SIV	silo interface vault
SM	Standard Missile
SM-3	Standard Missile -3
SMDC	Space and Missile Defense Command, U.S. Army
SMDC/ARSTRST	Space and Missile Defense Command/Army Forces Strategic Command
SME	Subject Matter Expert
SMM	System Mission Manager
SNL	Sandia National Lab
SNWC	Space and Naval Warfare Command

ACRONYMS AND ABBREVIATIONS

SOLD	Simulation-Over-Live Driver
SPAWAR	Naval Space and Warfare Command; Space and Naval Warfare Systems Command
SPFR	System Post Flight Reconstruction
SPMT	System Pre Mission Test
SPS	Standard Procurement System
SPURC	Standard Plume Ultraviolet Radiation Code
SRALT	Short Range Air Launch Target
SRBM	Short-Range Ballistic Missiles
SRBMD	Short Range Ballistic Missile Defense
SRHSM	Sensor Registration Health & Status Monitoring
SRP	Stockpile Reliability Program
SRR	System Requirements Review; Software Readiness Review
SS	Sole Source; Summary Screens; System Specification
SS/CPAF	Soul Source/ Cost Plus Award Fee
SS/CPFF	Soul Source/ Cost Plus Fixed Fee
SSA	Space Situational Awareness
SSC	System Security Concept
SSF	Single Stimulation Framework
STOC	System Test and Operations Center
STRATCOM	US Strategic Command
STSS	Satellite Tracking and Surveillance System; Space Tracking and Surveillance System
STTR	Small Business Technology Transfer
SYMP	Symposium
T	
T&E	Test and Evaluation
TALSS	THAAD Active Leak Sensor System
TC	Targets and Countermeasures
TCM	Total downtime due to corrective maintenance actions including logistics
TDA	Table of Distribution and Allowances
TDACS	Throttleable Divert and Attitude Control System
TDS	Terminal Defense Segment
TEC	Test Execution Control
TECC	Theater Enterprise Computing Center
TECHREP	Technical Representative
TFCC	THAAD Fire Control and Communications
TGx	Trajectory Generator - External
THAAD	Terminal High Altitude Area Defense
TIL	Test Integration Lab
TIM	Technical Interchange Meeting
TMC	Threat Modeling Center
TMSS	Threat Modeling Simulation System
TOO	Test of Opportunity; Target of Opportunity
TOR	Trouble Observation Reports
TPM	Technical Performance Measurement; Total downtime due to preventative maintenance
TRIMM	Transmit/Receive Integrated Microwave Module
TRM	Test Resource Manager
TRMP-T	Test Resources Mission Planning Tool
TSG	Tactical Support Groups
TSS	Training Support System
TT	Total Time
TTP	Tactics, Techniques & Procedures
U	
UARC	University Affiliated Research Center
UAV	Unmanned Aerial Vehicle
UEWR	Upgraded Early Warning Radar
ULCHI	Ulchi Freedom Guardian
UNET	Unclassified Network

ACRONYMS AND ABBREVIATIONS

USAFE	U. S. Air Forces in Europe
USDAT&L	Office of Under Secretary of Defense/Acquisitions, Travel and Logistics OUSD/AT&L
USN	United States Navy
USNORTHCOM	United States Northern Command
USPACOM	United States Pacific Command
USSTRATCOM	United States Strategic Command
UUR	University-to-University
V	
V&A	Verification & Assessment
V&V	verification and validation
VAFB	Vandenberg Air Force Base, CA
VGI	VL S GPS Interface
VLS	Vertical Launching System; Vertical Launch System
VTC	Video Teleconferencing
VV&A	Verification, Validation, and Accreditation
VVACB	Verification, Validation and Accreditation Control Board
VVAWG	VV&A working group
W	
WETLANS	Wargames, Exercises and Training Local Area Networks
WIP	Warfighter Involvement Process
WSC	Wargames Support Center
WSMR	White Sands Missile Range, White Sands, NM
WSTF	White Sands Test Facility
X	
XBR	X-Band Radar
Y	
YPG	Yuma Proving Ground

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	67.921	69.438	9.321	-	-	-	-	-	-	-	-	146.680
MD25: <i>Advanced Technology Development</i>	67.484	66.024	-	-	-	-	-	-	-	-	-	133.508
MD40: <i>Program Wide Support</i>	0.437	3.414	9.321	-	-	-	-	-	-	-	-	13.172

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the following efforts transferred from the Ballistic Missile Defense Technology Program Element 0603175C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

- Advanced Concepts and Performance Assessment moved to Advanced Concepts and Performance Assessment Program Element 0603176C
- Discrimination Sensor Technology moved to Discrimination Sensor Technology Program Element 0603177C
- Weapons Technology moved to Weapons Technology Program Element 0603178C
- Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) moved to Advanced C4ISR Program Element 0603179C
- Advanced Research moved to Advanced Research Program Element 0603180C
- Common Kill Vehicle Technology moved to Common Kill Vehicle Technology Program Element 0603294C

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.

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). MD40 PWS transfers to the new Technology Program Elements, 0603176C, 0603177C, 0603178C, 0603179C, 0603180C beginning in FY 2015.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	79.975	309.203	212.715	-	212.715
Current President's Budget	69.438	9.321	-	-	-
Total Adjustments	-10.537	-299.882	-212.715	-	-212.715
• Congressional General Reductions	-0.100	-			
• Congressional Directed Reductions	-4.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-299.882			
• Reprogrammings	0.600	-			
• SBIR/STTR Transfer	-0.657	-			
• Other Adjustment	-6.380	-	-212.715	-	-212.715

Change Summary Explanation

The FY 2014 and FY 2015 reductions in this Program Element are the net result of the transfer of all efforts, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76), to the following Program Elements:

- Advanced Concepts and Performance Assessment moved to Advanced Concepts and Performance Assessment Program Element 0603176C
- Discrimination Sensor Technology moved to Discrimination Sensor Technology Program Element 0603177C
- Weapons Technology moved to Weapons Technology Program Element 0603178C
- Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) moved to Advanced C4ISR Program Element 0603179C
- Advanced Research moved to Advanced Research Program Element 0603180C
- Common Kill Vehicle Technology moved to Common Kill Vehicle Technology Program Element 0603294C

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD25: <i>Advanced Technology Development</i>	67.484	66.024	-	-	-	-	-	-	-	-	-	133.508

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

Note

N/A

A. Mission Description and Budget Item Justification

Beginning in FY 2014, the following efforts transferred from the Ballistic Missile Defense Technology Program Element 0603175C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

- Advanced Concepts and Performance Assessment moved to Advanced Concepts and Performance Assessment Program Element 0603176C
- Discrimination Sensor Technology moved to Discrimination Sensor Technology Program Element 0603177C
- Weapons Technology moved to Weapons Technology Program Element 0603178C
- Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) moved to Advanced C4ISR Program Element 0603179C
- Advanced Research moved to Advanced Research Program Element 0603180C
- Common Kill Vehicle Technology moved to Common Kill Vehicle Technology Program Element 0603294C.

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

	FY 2013	FY 2014	FY 2015
Title: Enhanced Command, Control, Battle Management and Communication	44.735	-	-
Description: Beginning in FY 2014, the Enhanced Command, Control, Battle Management and Communication effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C.			
FY 2013 Accomplishments:			
-Completed maturation and testing of new Ballistic Missile Defense System (BMDS) Overhead Persistent Infrared (OPIR) Architecture (BOA) baseline release (BBR 5.1 Spiral 2) to support Spiral 8.2 integration and testing.			
-Conducted System Requirements Review and established technical baseline requirements for advanced Command, Control, Battle Management and Communication (C2BMC) technology to support European Phased Adaptive Approach (EPAA) Phase 3.			
-Completed remote sensor technology and Space Tracking and Surveillance System (STSS) integration prototype development and evaluation and successfully demonstrated the technology during a live fire event.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>-Continued University research on an agent-based architecture construct and incorporated independent assessments of prototype framework.</p> <p>-Investigated advanced sensor resource management, remote optical characterization, real-time missile classification algorithms, battle management, data fusion, and threat typing through Small Business Innovative Research Phase 1, Phase 2, and Rapid Integration Fund efforts.</p> <p>-Utilized a small business developed advanced sensor resource management prototype to support (OPIR) planning/tasking analysis.</p> <p>-Initiated the Simultaneous Correlation of Unambiguous Tracks (SCOUT) prototype and continued discrimination functionality exploitation within an advanced C2BMC prototype to support object attribute determination.</p> <p>-Completed integration and began utilization of GEO Scanner satellite data feeds into a track generation prototype to expand the Radio Frequency (RF) sensor cueing ability of the BMDS OPIR Architecture (BOA) thereby improving the raid capacity of the RF sensors.</p> <p>-Developed architecture concepts to support a robust infrared sensor cueing capability through the Joint OPIR Ground initiative.</p> <p>-Initiated algorithm development for hit assessment and continued mid-course tracking algorithm improvements and boost phase tracking algorithm enhancements.</p> <p>-Initiated engineering design and development for BMDS OPIR Architecture (BOA) 6.1 to address EPAA Phase 3 requirements.</p> <p>FY 2014 Plans:</p> <p>- FY 2014 plans and accomplishments are captured in the Advanced Command and Control, Battle management & Communication Program Element, 0603896C.</p> <p>FY 2015 Plans:</p> <p>N/A</p>			
<p>Title: Advanced Concepts & Performance Assessment</p> <p>Description: Beginning in FY 2014, the Advanced Concepts and Performance Assessment effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Concepts and Performance Assessment Program Element 0603176C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).</p> <p>FY 2013 Accomplishments:</p> <p>-Beginning in FY 2013, Advanced Technology Modeling and Simulation was centralized in this accomplishment area for efficiencies and budget clarity</p> <p>- Defined realistic parameters for the Standard Missile-3 Block IIB and Common Kill Vehicle (CKV) efforts using common modeling and simulation infrastructure</p>	1.920	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>- Examined the performance of seeker alternatives for an EKV redesign against a complex multi-object scenario. For CKV Phase II activities, completed development/testing of models to evaluate multi-KV functionality and an imaging seeker with onboard discrimination algorithms</p> <p>-Initiated development of a government-owned Modular open Kill Vehicle Architecture (MoKVA) in the Rational Rhapsody framework. Making it easier to develop and integrate advanced component systems; effectively and affordably improving missile system performance for advanced KV's</p> <p>-Continued developing the Simitar framework, focused on implementing the contractor models enabling government system-level analysis of the competing concepts</p> <p>-Stimulated CKV and other advanced technology concepts by producing a suite of Simitar framework generic tracker models, including a generic infrared sensor model, C2BMC cue generator model, and enhanced table driven platform models</p> <p>-Completed prototyping a Simitar to Single Stimulation Framework (SSF) integration</p> <p>-Developed and implemented analytic tools and mathematical models for advanced sensor performance assessment/expectations prior to Flight Test Mission (FTM) 20 and 21</p> <p>-Worked with and incorporated Small Business Innovative Research (SBIR) and University Research modeling and simulation products into assessment toolkits which integrated optimization and reduced model runtime, extended predictive tracking capabilities for future concept studies, and which addressed model replicability eventually leading to increased model reuse and improved validation</p> <p>-Conducted internal benchmarking simulation exercises and a yearly internal modeling and simulation review to update analysis and model requirements for emerging program concepts</p> <p>FY 2014 Plans: - FY 2014 plans and accomplishments are captured in the Advanced Concepts and Performance Assessment Program Element, PE 0603176C.</p> <p>FY 2015 Plans: N/A</p>			
<p>Title: Discrimination Sensor Technology</p> <p>Description: Beginning in FY 2014, the Discrimination Sensor Technology effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Discrimination Sensor Technology Program Element 0603177C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).</p> <p>FY 2013 Accomplishments: FY 2013 Accomplishments are captured in the Advanced Remote Sensor Technology Program Element (0604886C).</p> <p>FY 2014 Plans:</p>	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
- FY 2014 plans and accomplishments are captured in the Discrimination Sensor Technology Program Element, 0603177C. FY 2015 Plans: N/A				
Title: Weapons Technology Description: Beginning in FY 2014, the Weapons Technology effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (113-76). FY 2013 Accomplishments: FY 2013 Accomplishments are captured in the Directed Energy Research Program Element (0603901C) and in the Standard Missile-3 Block IIB Program Element (0603902C). FY 2014 Plans: - FY 2014 plans and accomplishments are captured in the Weapons Technology Program Element, 0603178C. FY 2015 Plans: N/A		-	-	-
Title: Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance Description: Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act, 2014 (P.L. 113-76). FY 2013 Accomplishments: N/A FY 2014 Plans: - FY 2014 plans and accomplishments are captured in the Advanced C4ISR Program Element, 0603179C. FY 2015 Plans: N/A		-	-	-
Title: Advanced Research		19.369	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>

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

Description: Beginning in FY 2014, the Advanced Research effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Research Program Element 0603180C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

FY 2013 Accomplishments:

- University Engagement
- Awarded Advanced Research contracts to domestic universities for innovative early intercept investigations:
- Texas A&M University: Ignition of composite propellants with advanced additives
- University of Alabama in Huntsville: Environmentally friendly oxidizer development
- University of New Hampshire: Gas circulator for Diode Pumped Alkali Laser

- Managed advanced research of ongoing university contracts:
- Alabama A&M University: Computational algorithms using reconfigurable logic devices
- Auburn University: Radar signal processing for multi sensor, multi target tracking
- Clemson University: Power scaling capability of High Power Fiber Laser Research
- John Hopkins University: Optical signature models
- Texas A&M University: Solid Propellant Additives for Divert Attitude Control System (DACS) Applications
- Texas A&M University: Hybrid Waveguide/Micro Electro Mechanical System Optical Signal Processor
- U.S. Air Force Academy: Scaling Diode Pumped Alkali Lasers for higher power output
- University of Alabama Huntsville: Computational studies of aero-optic effects of higher Reynolds numbers gas flows over sensor structures.
- University of Connecticut: Radar signal process and sensor fusion
- University of Illinois: Optimal engagement planning
- University of Southern California: Algorithms for detection, track, and classification of objects in a high debris environment

- International Research
- Leveraged University-to-University (UUR) International Research opportunities with allied nations to enhance BMDS Advanced Technology initiatives and build stronger relationships with North Atlantic Treaty Organization (NATO) partner countries and our allies:
- Auburn University/Middle East Technical University, Turkey: Integrated framework for engineering replicability into high assurance Ballistic Missile Defense System (BMDS) simulations
- University of Nebraska/University of Rouen, France: Polymer parts with tailored microstructure distribution
- University of Nebraska/University of Bordeaux, France: Fast deposition of diamond films in open air

FY 2013	FY 2014	FY 2015

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>-Completed negotiations with Denmark to assess the utility of the Weibel Frequency Modulated Continuous Wave Radar (FNCWR) Transitioned Research</p> <p>-Facilitated delivery of radome test units to the Israeli Program for use in David's Sling system</p> <p>-Facilitated delivery of two 24 inch silicon carbide mirrors, developed by TREX Enterprises Corporation under an Advanced Technology Innovation Broad Agency Announcement contract, to L3 for use on an airborne data collector for the Ballistic Missile Defense System</p> <p>-Transitioned nine SBIR developed technologies to the Rapid Innovation Funding program for accelerated development and transition to the Ballistic Missile Defense System.</p> <p>-Delivered a "Propulsion Stability Model for Small Thrusters", developed under a SBIR contract, to Terminal High Altitude Area Defense (THAAD) Program</p> <p>Other Efforts</p> <p>-Managed 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>-Conducted System Engineering to identify initiatives and technology to defend against current and future threats</p> <p>FY 2014 Plans:</p> <p>- FY 2014 plans and accomplishments are captured in the Advanced Research Program Element, PE 0603180C.</p> <p>FY 2015 Plans:</p> <p>N/A</p>			
Accomplishments/Planned Programs Subtotals	66.024	-	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency									Date: March 2014		
Appropriation/Budget Activity 0400 / 3				R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>				Project (Number/Name) MD25 / <i>Advanced Technology Development</i>			

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2015</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u>	
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	0.437	3.414	9.321	-	-	-	-	-	-	-	-	13.172

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

Note

MD40 PWS transfers to the new Technology Program Elements beginning in FY 2015 in accordance with the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	3.414	9.321	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	3.414	9.321	-

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603175C / <i>Ballistic Missile Defense Technology</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>

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

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	6.919	8.470	-	8.470	10.683	10.867	11.687	11.994	Continuing	Continuing
MD71: <i>Advanced Concepts and Performance Assessments</i>	-	-	6.919	7.986	-	7.986	10.092	10.201	10.897	11.138	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	-	-	0.484	-	0.484	0.591	0.666	0.790	0.856	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note
 Beginning in FY 2014, the Advanced Concepts and Performance Assessments effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Concepts and Performance Assessments Program Element 0603176C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

The Advanced Concepts & Performance Assessments (ACPA) Program delivers an integrated government concept definition, simulation, and analysis capability and centralizes assessment activities of advanced Ballistic Missile Defense (BMD) technology. Providing insight into the performance of proposed concepts extends Missile Defense Agency's (MDA) ability to address evolving threats for the warfighter.

To rapidly assess innovative technology concepts, cutting-edge data-collection methods, advanced modeling techniques, hardware-in-the-loop testbeds, and high-performance computing platforms are developed by working directly with universities, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC), and small businesses.

Subject matter experts provide independent assessments of government, university, and industry technology concepts, which are used in concert with systems engineering requirements to support acquisition strategy decisions and define technology focus areas. Structured concept definition and assessment methodologies enable analysts to quickly validate technology focus areas, verify contractor technology solutions and models, and evaluate promising concepts in candidate future Ballistic Missile Defense System (BMDS) architectures.

ACPA initiatives identify 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. This methodology was proved successful in the analyses of the Standard Missile-3 Block IIB program, where independent government analysts were able to process modeled concepts from industry to analyze their contributions to the BMDS. This Better Buying Power philosophy has been incorporated and applied to the earliest stages of technology development to maximize technology investments in a limited budget environment.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	6.919	8.470	-	8.470
Total Adjustments	-	6.919	8.470	-	8.470
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	6.919			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	8.470	-	8.470

Change Summary Explanation

Beginning in FY 2014, the Advanced Concepts and Performance Assessments effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Concepts and Performance Assessments Program Element 0603176C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>	Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD71: <i>Advanced Concepts and Performance Assessments</i>	-	-	6.919	7.986	-	7.986	10.092	10.201	10.897	11.138	Continuing	Continuing

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

Note

Beginning in FY 2014, the Advanced Concepts and Performance Assessments effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Concepts and Performance Assessments Program Element 0603176C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

A. Mission Description and Budget Item Justification

Advanced Concepts & Performance Assessment centralizes all Advanced Technology concept modeling, simulation, software, and analysis efforts. Combining models of promising technical solutions into BMDS system-level simulations, Advanced Concepts & Performance Assessment enables leadership to make data driven acquisition and technology investment decisions.

This effort capitalizes on the innovation of small business, universities, Federally Funded Research and Development Centers (FFRDC), University Affiliated Research Centers (UARC) to pursue a broad range of hardware, software, models, algorithms, and assessment capabilities. These capabilities are used to assess sensor and weapon system concepts in BMDS architectures. These assessments bring together government developed models representing existing and future ballistic missile defense architectures, technology concepts, and advanced algorithms to provide detailed assessments of concept performance and support investment decisions.

These initiatives combined with a robust high performance computing infrastructure provide a unique government owned capability to demonstrate and assess technology concepts.

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

	FY 2013	FY 2014	FY 2015
Title: Advanced Concepts and Performance Assessment	-	6.919	7.986
Description: Advanced Concepts and Performance Assessment's diverse staff of subject matter experts develops advanced concepts across the broad spectrum of Ballistic Missile Defense (BMD) Technology initiatives.			
<ul style="list-style-type: none"> - Prioritize technology investments and inform requirements - Develop and extend modeling techniques - Demonstrate concept performance against evolving threats 			
FY 2013 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>	Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>		
B. Accomplishments/Planned Programs (\$ in Millions)		FY 2013	FY 2014	FY 2015
<p>FY 2013 accomplishments are captured in the BMD Technology Program Element, 0603175C.</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Provide scenario assessments highlighting the capability of advanced sensors in Homeland defense, deriving preliminary advanced sensor top-level mission requirements and blue force laydowns, and to generate Government Furnished Information (GFI) products for the Common Kill Vehicle (CKV) technology contractors - Work with the Ballistic Missile Defense System (BMDS) Architect and Systems Engineer to define realistic concepts for the future BMDS - Assess technology for next generation interceptors and kill vehicles, advanced discriminating sensors, and directed energy systems - Identify promising technology investment opportunities - Focus research and engineering activities from university and small business partners through a rapid innovation model based engineering test bed - Reduce time to translate innovative technology into BMDS capability by integrating models of emerging concepts that characterize key parameters and expected performance <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Work with the Ballistic Missile Defense System (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, models and assessments for kill vehicles, discrimination sensors, space alternatives and directed energy systems - Mature tracking, discrimination, and sensor fusion algorithms - Demonstrate precision track through simulation exercises - Accelerate assessment of hardware and algorithms for space alternative sensors - Focus research and engineering activities from university and small business partners to identify suitable technology and concepts that improve Ballistic Missile Defense System (BMDS) performance through 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 				
Accomplishments/Planned Programs Subtotals		-	6.919	7.986

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>	Project (Number/Name) MD71 / <i>Advanced Concepts and Performance Assessments</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603177C: <i>Discrimination Sensor Technology</i>	-	29.642	45.110	-	45.110	59.278	60.054	62.897	21.051	Continuing	Continuing
• 0603178C: <i>Weapons Technology</i>	-	46.708	14.068	-	14.068	36.494	46.026	56.037	83.722	Continuing	Continuing
• 0603180C: <i>Advanced Research</i>	-	19.188	16.584	-	16.584	16.715	16.924	18.336	18.723	Continuing	Continuing
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing

Remarks

D. Acquisition Strategy

Advanced Concepts and Performance Assessment utilizes an acquisition strategy that continues its successful partnerships with Small Business, the Aviation & Missile Research Development & Engineering Center (AMRDEC), Federally Funded Research and Development Centers (FFRDCs) and University Affiliated Research Centers (UARCs) to provide concept modeling and assessment capabilities. This effort leverages agency and partner subject matter experts and government model based assessments to inform Better Buying Power acquisition decisions.

E. Performance Metrics

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	-	0.484	-	0.484	0.591	0.666	0.790	0.856	Continuing	Continuing

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

Note

Beginning in FY 2014, the Advanced Concepts and Performance Assessments effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Concepts and Performance Assessments Program Element 0603176C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	0.484
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	0.484

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603176C / <i>Advanced Concepts and Performance Assessment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	29.642	45.110	-	45.110	59.278	60.054	62.897	21.051	Continuing	Continuing
MC95: <i>Cyber Operations</i>	-	-	0.168	0.250	-	0.250	0.252	0.255	0.257	0.260	Continuing	Continuing
MD95: <i>Discrimination Sensor Technology</i>	-	-	29.474	42.553	-	42.553	55.748	56.270	57.713	18.886	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	-	-	2.307	-	2.307	3.278	3.529	4.927	1.905	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the Discrimination Sensor Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Discrimination Sensor Technology Program Element 0603177C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

A. Mission Description and Budget Item Justification

The Discrimination Sensor Technology program matures technology with proven tactical applications and applies those plus other emerging technology 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 Ballistic Missile Defense System (BMDS) capability to develop precision tracks for engagement significantly quicker than current radar and discriminate increasing numbers of objects by an order of magnitude.

This technology has the potential to significantly enhance/enable the following capabilities while decreasing the cost of the BMDS:

- Precision track of multiple objects to exceed engage-on-remote requirements
- Discriminating lethal objects from countermeasures
- End-to-end correlation of sensor track and discrimination data
- Timely and accurate kill assessment
- Enhanced probability of kill
- Future discriminating weapon and space sensors

Discrimination Sensor Technology contributions to the Prioritized Capabilities List include: Persistent Surveillance - improve birth-to-death tracking, identification and targeting.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603177C I <i>Discrimination Sensor Technology</i>
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B. Program Change Summary (\$ in Millions)	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	29.642	45.110	-	45.110
Total Adjustments	-	29.642	45.110	-	45.110
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	29.642			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	45.110	-	45.110

Change Summary Explanation

The FY 2014 and FY 2015 increases reflect the transfer of the Discrimination Sensor Technology effort from the Ballistic Missile Defense Technology Program Element (0603175C) to the Discrimination Sensor Technology Program Element, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>				Project (Number/Name) MC95 / <i>Cyber Operations</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC95: <i>Cyber Operations</i>	-	-	0.168	0.250	-	0.250	0.252	0.255	0.257	0.260	Continuing	Continuing

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

Note

Project MC95 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2015. Funds were previously reported in Project MD25 of PE 0603175C, Ballistic Missile Defense Technology in the Discrimination Sensor Technology section.

A. Mission Description and Budget Item Justification

The funding in this 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 the MDA Discrimination Sensor Technology 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)

	FY 2013	FY 2014	FY 2015
Title: Network / System Certification and Accreditation (C&A)	-	0.168	0.250
Description: Project MC95 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2015. Funds were previously reported in Project MD25 of PE 0603175C, Ballistic Missile Defense Technology in the Discrimination Sensor Technology section.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: - Fund Discrimination Sensor Technology Information Assurance Manager (IAM) civilian salaries - Conduct cyber security / information assurance engineering and architecture planning for Discrimination Sensor Technology information technology systems			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MC95 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Plan and test the information assurance controls for Ballistic Missile Defense System (BMDS) Discrimination Sensor Technology systems - Develop Discrimination Sensor Technology DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. - Conduct Controls Validation Testing (CVT) for Discrimination Sensor Technology mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies - Conduct annual information assurance reviews on the Discrimination Sensor Technology enclaves to assess compliance in implementing and maintaining IA controls. <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Fund Discrimination Sensor Technology Information Assurance Manager (IAM) civilian salaries - Conduct cyber security / information assurance engineering and architecture planning for Discrimination Sensor Technology information technology systems - Plan and test the information assurance controls for Ballistic Missile Defense System (BMDS) Discrimination Sensor Technology systems - Develop Discrimination Sensor Technology DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. - Conduct Controls Validation Testing (CVT) for Discrimination Sensor Technology mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies - Conduct annual information assurance reviews on the Discrimination Sensor Technology enclaves to assess compliance in implementing and maintaining IA controls. 			
Accomplishments/Planned Programs Subtotals	-	0.168	0.250

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

N/A

Remarks

D. Acquisition Strategy

The acquisition strategy for Cyber operations consists of using Missile Defense Agency (MDA) civilian employees and the existing Missile Defense Agency Engineering and Support Services (MiDAESS) contract.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MD95 / <i>Discrimination Sensor Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
<i>MD95: Discrimination Sensor Technology</i>	-	-	29.474	42.553	-	42.553	55.748	56.270	57.713	18.886	Continuing	Continuing

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

Note

Beginning in FY 2014, the Discrimination Sensor Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Discrimination Sensor Technology Program Element 0603177C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).

A. Mission Description and Budget Item Justification

The Discrimination Sensor Technology program develops next-generation sensors and detectors and integrates them into unmanned aerial vehicles (UAVs) to demonstrate improvements in discrimination and address warfighter requirements for missile defense. This program evaluates and researches emerging technology that enables game changing discrimination improvements for incorporation into next generation interceptors and space systems. MDA is pursuing a cost-effective incremental upgrade philosophy that demonstrates airborne precision tracking, improved track performance, simple scene discrimination and then complex scene discrimination. These advanced sensors 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. A precise, timely track is required for an interceptor to engage a threat object. In addition, improved object sighting message data is required to discriminate threat objects.

In FY 2015, Discrimination Sensor Technology demonstrates an airborne precision track capability equivalent to an Army/Navy Transportable radar (AN/TPY-2) with the potential to augment Ballistic Missile Defense System (BMDS) radar. The test construct incrementally buys down risk by testing our evolving sensor technology from the ground and then from UAVs and uses repeatable Resident Space Objects (RSOs) before participating in BMDS tests. Discrimination Sensor Technology uses much of the existing BMDS architecture to develop 3-dimensional (3-D) tracks of the ballistic missile sent via Link-16 to Aegis ships. FY 2015 funds final integration and test of the launch of a SM-3 guided missile based on these remote IR tracking sensors.

In parallel, MDA will develop advanced sensors that increase track precision by 150% relative to AN/TPY-2. Initially the MTS-B sensors will be replaced by MTS-Cs using an advanced sensor. Discrimination Sensor test data anchors discrimination models and simulations and informs future interceptor and space sensor decisions.

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

	FY 2013	FY 2014	FY 2015
Title: Discrimination Sensor Technology	-	29.474	42.553
Description: Beginning in FY 2014, the Discrimination Sensor Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Discrimination Sensor Technology Program Element 0603177C, per the FY 2014 Consolidated Appropriations Act (Public Law 113-76).			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MD95 / <i>Discrimination Sensor Technology</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p><i>FY 2013 Accomplishments:</i> FY 2013 accomplishments are captured in the Discrimination Sensor Technology Program Element, 0604886C.</p> <p><i>FY 2014 Plans:</i></p> <ul style="list-style-type: none"> - Evaluate and research discrimination requirements and identify technology 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 and space 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 <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Flight test 2 UAV-borne Multi-Spectral Targeting System (MTS)-B sensors - Demonstrate that Airborne Electro-Optical (EO) / Infrared (IR) precision tracking exceeds Aegis Launch-on/Engage-on Remote track requirements - Ground test an advanced EO / IR sensor integrated into MTS-Cs against resident space objects and BMDS targets of opportunity - Modify the Reaper, processor and ground control station with MTS-C and demonstrate 30% improved track performance and discrimination capability - Initiate development of next-generation EO / IR sensor upgrades that increase precision and range by 150% 			
Accomplishments/Planned Programs Subtotals	-	29.474	42.553

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	-	6.919	8.470	-	8.470	10.683	10.867	11.687	11.994	Continuing	Continuing
• 0603178C: <i>Weapons Technology</i>	-	46.708	14.068	-	14.068	36.494	46.026	56.037	83.722	Continuing	Continuing
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603180C: <i>Advanced Research</i>	-	19.188	16.584	-	16.584	16.715	16.924	18.336	18.723	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MD95 / <i>Discrimination Sensor Technology</i>
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy for Discrimination Sensor Technology consists of partnering with Federally Funded Research and Development Centers and University Affiliated Research Centers. MDA will leverage Agency and partner subject matter experts and use government model based assessments to inform Better Buying Power philosophy acquisition decisions. The Missile Defense Agency will then award contracts to industry and universities via the Advanced Technology Innovation Broad Agency Announcement and competitive procurements to develop and demonstrate promising components and integrated systems in realistic test environments. Discrimination Sensor Technology shapes future Ballistic Missile Defense System (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 Ballistic Missile Defense System architecture.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	-	2.307	-	2.307	3.278	3.529	4.927	1.905	Continuing	Continuing

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

Note

Transferred from Technology Program Element beginning in FY 2015 in accordance with the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	2.307
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	2.307

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603177C / <i>Discrimination Sensor Technology</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	46.708	14.068	-	14.068	36.494	46.026	56.037	83.722	Continuing	Continuing
MD69: <i>Directed Energy Research</i>	-	-	22.944	13.348	-	13.348	34.476	43.203	52.251	77.743	Continuing	Continuing
MD72: <i>Interceptor Technology</i>	-	-	23.764	-	-	-	-	-	-	-	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	-	-	0.720	-	0.720	2.018	2.823	3.786	5.979	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the Weapons Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

Weapons Technology develops solutions for destroying an increasing number of threat objects. Weapons Technology focuses on reducing the cost of an engagement by developing compact, efficient high energy lasers (HEL) and the novel beam propagation technology required for low-power to strategic-class Ballistic Missile Defense System (BMDS) applications. Weapons Technology works closely with Discrimination Sensor Technology to correlate threat identification and engagement hand over requirements to build the foundation for next-generation interceptors and multi-mission directed energy platforms.

The Missile Defense Agency (MDA) works in collaboration with the Office of the Assistant Secretary of Defense for Research and Engineering, the Defense Advanced Research Projects Agency, the High Energy Laser Joint Technology Office and Service partners in a systems engineering based strategy for collaborative research, development, test and evaluation of weapons technologies.

Within the Directed Energy Technology area, the MDA is conducting research into the transmission and control of directed energy largely above the atmosphere for mid-term missile defense applications and ultimately boost phase intercepts. First, MDA is pursuing two promising laser technologies in a competitive environment. Both technologies have demonstrated potential to efficiently scale to high power. MDA will continue HEL technology development with the goal of scaling to power levels required for robust, speed of light missile defense. Second, incrementally integrate and test lower power laser systems on unmanned aerial vehicles. These laser test platforms will address a broad spectrum of mission applications while wringing out concept of operations doctrine for incorporating lasers into the battle space. MDA is actively engaging with the other DoD Agencies and the Services to identify joint airborne laser ventures that address mid-term mission capabilities for directed energy technology. To further support these BMDS Directed Energy applications, MDA continues to invest in a number of advanced technology initiatives.

The Weapons Technology 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	46.708	14.068	-	14.068
Total Adjustments	-	46.708	14.068	-	14.068
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	46.708			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	14.068	-	14.068

Change Summary Explanation

The FY 2014 and 2015 increases reflect the transfer of the Weapons Technology effort from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>				Project (Number/Name) MD69 / <i>Directed Energy Research</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD69: <i>Directed Energy Research</i>	-	-	22.944	13.348	-	13.348	34.476	43.203	52.251	77.743	Continuing	Continuing

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

Note

Beginning in FY 2014, the Weapons Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

The Missile Defense Agency (MDA) Directed Energy project develops next-generation lasers and integrates them into high altitude for missile defense testing. MDA is pursuing two discrete lasers, the Diode Pumped Alkali Laser system at Lawrence Livermore National Laboratory and the Fiber Combining Laser system at the Massachusetts Institute of Technology/Lincoln Laboratory. These technologies were chosen based on their potential for efficiency and scaling to strategic-class power levels. Both technologies set power records last year and are on track to demonstrate performance improvements in FY 2015. In parallel, the MDA will partner with Industry to define concepts that could be used to develop and integrate a multi-kilowatt-class laser into an Unmanned Aerial Vehicle. The MDA will collaborate with our Service partners for joint development and test opportunities.

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

	FY 2013	FY 2014	FY 2015
Title: Directed Energy Research	-	22.944	13.348
Description: Beginning in FY 2014, the Directed Energy Research effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).			
FY 2013 Accomplishments: FY 2013 accomplishments are captured in the Directed Energy Program Element, 0603901C.			
FY 2014 Plans:			
<ul style="list-style-type: none"> - Demonstrate the efficiency, producibility, and scaling potential of candidate laser technology - Continue development of the Diode Pumped Alkali Laser System (DPALS) to produce high efficiency and excellent beam quality. Complete window, diode and wave guide development in support of the Alpha unit build - 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, demonstrate a 30 kilowatt (kW) Fiber Combining Laser (FCL) scalable to high power with high efficiency and near-ideal beam quality to efficiently deliver energy to targets at long range - Conduct experiments using a high altitude, low mach platform to validate directed energy lethality models 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>	Project (Number/Name) MD69 / <i>Directed Energy Research</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
- Initiate contracts with Industry to define concepts that could be used to develop and integrate a multi-kilowatt class laser into an Unmanned Aerial Vehicle for multi-mission demonstrations			
<i>FY 2015 Plans:</i>			
- Demonstrate a 10 kW subscale DPALS design with high efficiency and excellent beam quality			
- In conjunction with the Defense Advanced Research Projects Agency complete the engineering development unit for the next-generation FCL compact amplifier and complete the system concept for a mid-power flight system			
- Analyze and evaluate DPALS and FCL laboratory test data, as well as power and efficiency analysis for scaling to Ballistic Missile Defense System relevant power levels			
- Complete contracts with Industry to define concepts that could be used to develop and integrate a multi-kilowatt class laser into an Unmanned Aerial Vehicle for multi-mission demonstrations			
Accomplishments/Planned Programs Subtotals	-	22.944	13.348

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	-	6.919	8.470	-	8.470	10.683	10.867	11.687	11.994	Continuing	Continuing
• 0603177C: <i>Discrimination Sensor Technology</i>	-	29.642	45.110	-	45.110	59.278	60.054	62.897	21.051	Continuing	Continuing
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603180C: <i>Advanced Research</i>	-	19.188	16.584	-	16.584	16.715	16.924	18.336	18.723	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy for directed energy technology consists of partnering with Federally Funded Research and Development Centers and University Affiliated Research Centers. Missile Defense Agency (MDA) will leverage Agency and partner subject matter experts and use government model based assessments to inform Better Buying Power philosophy acquisition decisions. MDA will then award contracts to industry and universities via the Advanced Technology Innovation Broad Agency Announcement and competitive procurements to develop and demonstrate promising components and integrated systems in realistic test environments. Directed energy technology 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 Ballistic Missile Defense System architecture.

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>	Project (Number/Name) MD69 / <i>Directed Energy Research</i>
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E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>	Project (Number/Name) MD72 / <i>Interceptor Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD72: <i>Interceptor Technology</i>	-	-	23.764	-	-	-	-	-	-	-	Continuing	Continuing

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

Note

Beginning in FY 2014, the Weapons Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

The Interceptor Technology project focuses on development and test of component and sub-systems for solid propulsion divert and attitude control systems. No funding is requested for the Interceptor Technology project for FY 2015.

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

	FY 2013	FY 2014	FY 2015
Title: Interceptor Technology	-	23.764	-
Description: The Interceptor Technology project focuses on development and test of component and sub-systems for solid propulsion divert and attitude control systems. No funding is requested for the Interceptor Technology project for FY 2015.			
FY 2013 Accomplishments: FY 2013 Accomplishments are captured in the Standard Missile - 3 Block IIB Program Element, 0603902C.			
FY 2014 Plans: Conduct development and testing of enabling components for solid propulsion divert and attitude control systems that reduce the risk associated with long operation, precision control, safe operation and lower weight advanced kill vehicles.			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	-	23.764	-

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

N/A

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. This effort leverages Agency and partner subject matter experts and government model based assessments to inform Better Buying

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>	Project (Number/Name) MD72 / <i>Interceptor Technology</i>
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Power philosophy acquisition decisions. 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 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 Ballistic Missile Defense System (BMDS) architecture.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	-	0.720	-	0.720	2.018	2.823	3.786	5.979	Continuing	Continuing

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

Note

Beginning in FY 2014, the Weapons Technology effort was transferred from the Ballistic Missile Defense Technology Program Element (0603175C) to the Weapons Technology Program Element 0603178C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	0.720
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	0.720

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603178C / <i>Weapons Technology</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	-	-	24.000	-	-	-	-	-	-	-	-	24.000
MD73: <i>Advanced C4ISR</i>	-	-	12.500	14.545	-	14.545	9.815	3.700	-	-	-	40.560
MD40: <i>Program-Wide Support</i>	-	-	-	0.784	-	0.784	0.574	0.242	-	-	-	1.600

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

The Advanced C4ISR Program Element develops future Ballistic Missile Defense System (BMDS) capabilities to out-pace emerging and evolving threats. Advanced C4ISR 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. Missile Defense Agency uses the Prioritized Capabilities List (PCL) and the Agency's Achievable Capabilities List (ACL) to prioritize technology investments including Advanced C4ISR. MDA's investments balance the pursuit of promising next generation technology with near-term solutions to enhance existing BMDS capability.

Advanced Command, Control, Communication, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) develops and matures technology which enables rapid and exponential capability increases in our 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 C4ISR technology that has the potential to increase battlespace for all BMDS interceptors including the Terminal High Altitude Area Defense and Ground-based Interceptors.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	36.500	15.329	-	15.329
Total Adjustments	-	36.500	15.329	-	15.329
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	36.500			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	15.329	-	15.329

Change Summary Explanation

The decrease from FY 2014 to FY 2015 is due to completion of efforts and the movement of funding for continued Discrimination Improvements for Homeland Defense (DIHD) Mid-Term phase from Program Element 0603175C to Program Element 0603896C. Beginning in FY 2014, the Advance Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	-	-	24.000	-	-	-	-	-	-	-	-	24.000

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

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

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 C4ISR technology that has the potential to increase battlespace for all BMDS interceptors including the Terminal High Altitude Area Defense and Ground-based Interceptors. When technology is ready for transition, implementation will be in the BMDS Sensors (0603884C) and the C2BMC (0603896C) Program Elements.

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

	FY 2013	FY 2014	FY 2015
Title: Advanced Command and Control System Integration	-	24.000	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -Develop and mature Ballistic Missile Defense System Capability Planning Specification, System and Element Specifications and multiple interface control documents -Develop and install C2BMC Spiral 8.2 Test Lab for Integration testing with Service C2 systems -Analyze BMDS and Service C2 Planning Systems for data exchange compliance -Develop, prototype and integrate Advanced Discrimination Capability into BMDS C2 System -Conduct Terminal High Altitude Air Defense Fire Control integration study with future Army C2 Systems			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
-Develop the capability in the sensor resource management system to fully utilize the AN/TPY-2 sensors in support of Discrimination Improvements for Homeland Defense (DIHD) Near-term improvements -Complete development of ground test campaign requirements for DIHD Near-term improvements -Mature planned discrimination technology candidates to support the DIHD Mid-term phase through analysis and prototyping FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	-	24.000	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>SENSORS MILCON</i>	-	32.204	-	-	-	67.200	85.200	84.000	57.900	-	326.504
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

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. Additionally, the Defense Information Systems Agency supports C2BMC

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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worldwide long-haul communications. C2BMC Program Office government, Federally Funded Research and Development Center/University Affiliated Research Center, and Contract Support Services 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

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

Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>				Project (Number/Name) MD73 / <i>Advanced C4ISR</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD73: <i>Advanced C4ISR</i>	-	-	12.500	14.545	-	14.545	9.815	3.700	-	-	-	40.560

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

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

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 Ballistic Missile Defense System.

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. The Advanced C4ISR project will contribute to this effort through the development of advanced discrimination technologies to support the mid-term phase.

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

	FY 2013	FY 2014	FY 2015
Title: Advanced X-Band Radar Capabilities	-	12.500	14.545
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -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			
FY 2015 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>	Project (Number/Name) MD73 / <i>Advanced C4ISR</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
-Develop advanced X-band radar target acquisition and discrimination capabilities against threats launched over extended geographical regions on wide range of flight trajectories			
Accomplishments/Planned Programs Subtotals	-	12.500	14.545

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

Remarks

D. Acquisition Strategy

Advanced X-Band Radar Capabilities follows the Missile Defense Agency's capability-based acquisition strategy that emphasizes testing, development and evolutionary acquisition. The advanced technology development will include development of target acquisition and discrimination algorithms and assessment of performance. Performance assessment and transition risk reduction will use modeling, simulation, and online or offline assessment of live tracking opportunities. When ready, technology will transition to appropriate program elements for advanced component development and integration into Ballistic Missile Defense System X-Band Radars.

Acquisition will follow the acquisition strategy for radar sustainment and development. The Radar Sustainment Contract (RSC) will be used for both advanced technology development and for transition of technology to systems. The RSC was awarded in 2012 to sustain all the BMDS X-Band Radars. The contract provides sustainment of previously developed X-Band radar products, such as: 1) Software -maintenance of existing software developed to support the X-Band Radars; 2) Models & Simulation; (a) development, maintenance, and verification of high fidelity models, (b) support for war games and exercises, (c) support for performance assessment events; 3) Engineering Services -engineering support for deployed radars to facilitate maintenance efforts which may include but are not limited to hardware obsolescence studies, hardware redesign, technology insertion, and refurbishment efforts; 4) BMDS Test Planning, Execution, and Analysis -planning, execution and

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 3	PE 0603179C / <i>Advanced C4ISR</i>	MD73 / <i>Advanced C4ISR</i>

analysis of BMDS test requirements for previously developed hardware and software in accordance with the MDA Integrated Master Test Plan (IMTP). The contract is an Indefinite Delivery/Indefinite Quantity (IDIQ) task order contract. The contract scope will be assessed for future competitive awards.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	-	0.784	-	0.784	0.574	0.242	-	-	-	1.600

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

Note

Beginning in FY 2014, the Advanced Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced C4ISR Program Element 0603179C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	0.784
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	0.784

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

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603179C / <i>Advanced C4ISR</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	19.188	16.584	-	16.584	16.715	16.924	18.336	18.723	Continuing	Continuing
MD25: <i>Advanced Technology Development</i>	-	-	19.188	15.787	-	15.787	15.791	15.886	17.098	17.386	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	-	-	0.797	-	0.797	0.924	1.038	1.238	1.337	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the Advanced Research effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Research Program Element, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

Advanced Research conducts leading edge research and development to create and enable future missile defense capability. The Missile Defense Agency (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, innovative ideas from industry, and facilitates technology transition to the Ballistic Missile Defense System through a Commercialization and Transition Office. 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.

B. Program Change Summary (\$ in Millions)

	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	19.188	16.584	-	16.584
Total Adjustments	-	19.188	16.584	-	16.584
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	19.188			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	16.584	-	16.584

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>
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Change Summary Explanation

Beginning in FY 2014, the Advanced Research effort transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Research Program Element, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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

Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>				Project (Number/Name) MD25 / <i>Advanced Technology Development</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD25: <i>Advanced Technology Development</i>	-	-	19.188	15.787	-	15.787	15.791	15.886	17.098	17.386	Continuing	Continuing

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

Note

Beginning in FY 2014, the Advanced Research effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Research Program Element 0603180C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

Advanced Technology Development explores new Ballistic Missile Defense System (BMDS) capability by leveraging the creativity and innovation of the Nation's small businesses and universities, and through cooperative international research efforts between U.S. and foreign universities of allied nations. The program manages the selection process and administers the Missile Defense Small Business Innovation Research (SBIR) Program Element, 0605502C. SBIR topics and projects are selected annually based on identified needs across the BMDS and executed in partnership with the sponsoring elements. In FY 2015, the program 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. Projects may include directed energy, sensors, command and control, or interceptor technology. The program will execute and administer the Missile Defense Agency Science, Technology and Research Broad Agency Announcement (MSTAR BAA) which invests in university research ranging from sensor data fusion to solid rocket propulsion to advanced materials for missile defense application.

Advanced Technology Development pursues a broad range of revolutionary technology targeted for application and insertion into the BMDS. This effort facilitates the commercialization and transition of promising technology into the BMDS by promoting a cooperative environment to reduce cost and increase return on investment between small business, prime contractors and MDA elements. The program also manages the Science, Technology, Engineering and Mathematics (STEM) program for MDA, with a goal of increasing the awareness of K-12 and college students in STEM careers in order to enhance the number of U.S. scientists and engineers capable of solving future BMDS challenges.

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

	FY 2013	FY 2014	FY 2015
Title: Advanced Research	-	19.188	15.787
Description: N/A			
FY 2013 Accomplishments: FY 2013 accomplishments are captured in the BMD Technology Program Element, 0603175C.			
FY 2014 Plans: Award Advanced Research contracts to domestic universities for innovative investigations to enlarge the battle space and enhance discrimination and raid handling			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>-Pursue on-going scientific and engineering university research initiatives and projects:</p> <ul style="list-style-type: none"> --Clemson University: Power scaling capability of High Power Fiber Laser Research --Texas A&M University: Solid Propellant Additives for Divert Attitude Control System (DACS) Applications --Tuskegee University: Mechanical properties, fracture behavior and failure mechanisms of selective composites for re-entry vehicles --University of Illinois: Decision Theory for Optimal Engagement Planning --University of Tennessee: Target Handoff and Resource Management for Multi-Sensor Multi-Target Tracking System --North Carolina State University/Czech Republic Institute of Physics: Multi-sensor algorithm development to track space objects and debris --U.S. Air Force Academy: Scaling Diode Pumped Alkali Lasers for higher power output --Alabama A&M University: Computational algorithms using reconfigurable logic devices --University of Alabama Huntsville: Computational studies of aero-optic effects of higher Reynolds numbers gas flows over sensor structures. --University of Southern California: Algorithms for detection, track, and classification of objects in a high debris environment --Texas A&M University: Hybrid Waveguide/Micro Electro Mechanical System Optical Signal Processor <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> <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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2013	FY 2014	FY 2015
<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) Allied nations and our partner countries.</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 and integration to identify and mature initiatives and technology to defend against current and future threats</p> <p>FY 2015 Plans:</p> <p>--Pursue on-going scientific and engineering university research initiatives and projects:</p> <p>--Texas A&M University: Solid Propellant Additives for Divert Attitude Control System (DACs) Applications</p> <p>--Texas A&M University: Hybrid Waveguide/Micro Electro Mechanical System Optical Signal Processor</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>--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>--University of Maryland: Development of Thrusters for Fast Response Time DAC Propulsion Systems</p> <p>--University of New Hampshire: Gas Circulator for Diode Pumped Alkali Laser</p> <p>--University of Connecticut: Innovative Radar Signal Processing & Algorithms</p> <p>--Purdue University: Propulsion Improvements for MDA Applications</p> <p>--Howard University: Infrared Analysis in Counterfeit Parts Detection and Supply Chain Validation</p> <p>--Auburn University / Middle East Technical University, Turkey: Integrated Framework for Engineering Replicability into High Assurance BMDS Simulations</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> <p>-- Radar Systems</p> <p>-- Directed Energy Systems</p>			

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -- Electro-Optical / (Infrared)IR Sensor Systems -- Computer Science, Signal and Data Processing -- Mechanical and Aerospace engineering -- Decision Theory -- Modeling & Simulation -- 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 Ballistic Missile Defense System (BMDS) Advanced Technology initiatives and build stronger relationships with Missile Defense Agency (MDA) North Atlantic Treaty Organization (NATO) Allied nations and our partner countries.</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 and integration to identify and mature initiatives and technology to defend against current and future threats</p> <p>-MDA Science Technology Engineering and Mathematics (STEM) Outreach will expand volunteer activities for other MDA facilities to increase overall MDA K-12 STEM awareness and engagement nationwide</p>			
Accomplishments/Planned Programs Subtotals	-	19.188	15.787

C. Other Program Funding Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD25 / <i>Advanced Technology Development</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	-	6.919	8.470	-	8.470	10.683	10.867	11.687	11.994	Continuing	Continuing
• 0603177C: <i>Discrimination Sensor Technology</i>	-	29.642	45.110	-	45.110	59.278	60.054	62.897	21.051	Continuing	Continuing
• 0603178C: <i>Weapons Technology</i>	-	46.708	14.068	-	14.068	36.494	46.026	56.037	83.722	Continuing	Continuing
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy to conduct this technology development effort consists of partnering with accredited domestic universities, small businesses, and nonprofit organizations. Missile Defense Agency awards competitive procurements via the MDA Science and Technology Advanced Research Broad Agency Announcement; the Advanced Technology Innovation Broad Agency Announcement; the Small Business Innovative Research program; the Small Business Technology Transfer program; and the Science, Technology, Engineering, and Mathematics Outreach program.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	-	-	0.797	-	0.797	0.924	1.038	1.238	1.337	Continuing	Continuing

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

Note

Beginning in FY 2014, the Advanced Research effort was transferred from the Ballistic Missile Defense Technology Program Element 0603175C to the Advanced Research Program Element 0603180C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

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 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	0.797
Description: See paragraph A: Mission Description and Budget Item Justification			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	-	-	0.797

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

N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603180C / <i>Advanced Research</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603274C / <i>Special Program - MDA Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	61.371	32.926	36.426	51.033	-	51.033	9.900	-	-	-	-	191.656
MD81: <i>Special Programs - MDA Technology</i>	61.371	32.926	36.426	51.033	-	51.033	9.900	-	-	-	-	191.656

MDAP/MAIS Code: 362

The FY 2015 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)

	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	36.685	40.426	42.208	-	42.208
Current President's Budget	32.926	36.426	51.033	-	51.033
Total Adjustments	-3.759	-4.000	8.825	-	8.825
• Congressional General Reductions	-0.049	-			
• Congressional Directed Reductions	-	-4.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.334	-			
• SBIR/STTR Transfer	-0.437	-			
• Other Adjustment	-2.939	-	8.825	-	8.825

Change Summary Explanation

FY 2015 increase of \$8.825 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing
MD85: <i>Common Kill Vehicle Technology</i>	-	-	70.000	24.327	-	24.327	31.337	35.058	35.519	49.595	Continuing	Continuing
MD40: <i>Program Wide Support</i>	-	-	-	1.312	-	1.312	1.834	2.290	2.935	4.661	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

Beginning in FY 2014, the Common Kill Vehicle technology effort was transferred from the Ballistic Missile Defense Technology Program Element, 0603175C, to the Common Kill Vehicle Technology Program Element, 0603294C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76).

A. Mission Description and Budget Item Justification

On 15 March 2013, the Secretary of Defense announced steps to bolster protection of the homeland and stay ahead of long range ballistic missile threats. These steps included adding Ground-Based Interceptors (GBI), restructuring the Standard Missile-3 Block IIB program and shifting resources to develop advanced kill vehicle technology to improve all ballistic missile defense interceptors that operate outside the earth's atmosphere.

The Agency is defining the concepts for the redesign of the Agency's Exo-atmospheric Kill Vehicles (EKVs) with modular, open architecture and designed to common interfaces and standards, making upgrades easier and broadening our vendor and supplier base.

With the recognition that the threat from our potential adversaries is growing in number and complexity, the Agency is taking a phased approach to common kill vehicle technology. In Phase I, investments focus on mature technology and concept design to enable the replacement of EKV's in our current Ground-Based Interceptor force with a more capable, testable, reliable, producible, scalable and cost effective kill vehicle.

Phase II evolves kill vehicle capabilities, relying on a Ballistic Missile Defense System (BMDS) architecture that balances performance across the sensor, Command, Control, Battle Management and Communications (C2BMC) and kill vehicle elements, improving BMDS discrimination and potentially adding capability to destroy several objects within a threat complex with multiple kill vehicles. The Agency anticipates deploying these capabilities across the interceptor fleet in the next decade to address the evolving threat. In FY 2015, we will focus on maturing key technology and defining the system architecture necessary for the acquisition of multi-object kill vehicles.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	-	70.000	25.639	-	25.639
Total Adjustments	-	70.000	25.639	-	25.639
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	70.000			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	25.639	-	25.639

Change Summary Explanation

Beginning in FY 2014, the Common Kill Vehicle technology effort was transferred to Common Kill Vehicle Technology Program Element, 0603294C, per the FY 2014 Consolidated Appropriations Act (P.L. 113-76). Prior work was accomplished in the Standard Missile-3 Block IIB Program Element, 0603902C.

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>	Project (Number/Name) MD85 / <i>Common Kill Vehicle Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD85: <i>Common Kill Vehicle Technology</i>	-	-	70.000	24.327	-	24.327	31.337	35.058	35.519	49.595	Continuing	Continuing

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

Note

N/A

A. Mission Description and Budget Item Justification

Capitalizing on the creativity of our industrial base, this effort is refining kill vehicle technology concepts with three prime contractors, Boeing, Lockheed Martin and Raytheon, in conjunction with a government-led, Ballistic Missile Defense System (BMDS)-wide, independent systems engineering assessment. The contractors will present their initial design concepts and recommendations for Phase I, followed by a final concept review in 2014.

The Agency will use the results of the contractors' concept definition efforts and the government engineering assessment to inform a Ground-based Midcourse Defense (GMD) acquisition strategy for the selection of redesigned Exoatmospheric Kill Vehicles (EKVs) for the Ground-Based Interceptors (GBI). The joint government-contractor systems engineering assessment will provide a solid foundation to provide a more capable, reliable, producible and testable redesign for the present EKV while shaping the Agency's technology investments for Phase II and our future Ground Based Interceptors and Standard Missile-3 fleets.

In FY 2015, the Agency will focus investments on kill vehicle technology risk reduction efforts:

- Improve focal plane array producibility
- Improve inertial measurement unit performance, size, weight, and power
- Develop kill vehicle-to-kill vehicle communication technology enhancements
- Improve lethality
- Propulsion research
- Improve capability to integrate kill vehicle and off-board system discrimination data

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

	FY 2013	FY 2014	FY 2015
Title: Common Kill Vehicle	-	70.000	24.327
Description: The Missile Defense Agency is developing common kill vehicle technology to address emerging threats and enable the missile defense of our homeland.			
FY 2013 Accomplishments:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>	Project (Number/Name) MD85 / <i>Common Kill Vehicle Technology</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>FY 2013 accomplishments are captured in the Standard Missile - 3 Block IIB Program Element (0603902C).</p> <p>FY 2014 Plans: We are executing key tasks focused on developing common kill vehicle technology for both the Ground-Based Interceptor (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.</p> <p>Specifically, we plan to:</p> <ul style="list-style-type: none"> - 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 that improves performance while broadening the vendor base for future upgrades - Invest in key technology development areas to increase probability of kill and reliability of interceptors, including propulsion, inertial and alternative navigation, power 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 <p>FY 2015 Plans: This effort will focus on technology risk reduction</p> <ul style="list-style-type: none"> - Improve focal plane array producibility - Improve inertial measurement unit performance, size, weight, and power - Develop kill vehicle-to-kill vehicle communications technology enhancements - Improve lethality - Invest in other technology as arises 			
Accomplishments/Planned Programs Subtotals	-	70.000	24.327

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603176C: <i>Advanced Concepts and Performance Assessment</i>	-	6.919	8.470	-	8.470	10.683	10.867	11.687	11.994	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014	
Appropriation/Budget Activity 0400 / 3				R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>				Project (Number/Name) MD85 / <i>Common Kill Vehicle Technology</i>			

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

Line Item	FY 2013	FY 2014	FY 2015	FY 2015	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603177C: <i>Discrimination Sensor Technology</i>	-	29.642	45.110	-	45.110	59.278	60.054	62.897	21.051	Continuing	Continuing
• 0603178C: <i>Weapons Technology</i>	-	46.708	14.068	-	14.068	36.494	46.026	56.037	83.722	Continuing	Continuing
• 0603180C: <i>Advanced Research</i>	-	19.188	16.584	-	16.584	16.715	16.924	18.336	18.723	Continuing	Continuing
• 0603881C: <i>Ballistic Missile</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

Remarks

D. Acquisition Strategy

The acquisition strategy 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 the Advanced Technology Innovation 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 multi-object kill concepts incorporating lightweight kill vehicles and enhanced discrimination capability.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	-	-	-	1.312	-	1.312	1.834	2.290	2.935	4.661	Continuing	Continuing

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

Note
N/A

A. Mission Description and Budget Item Justification

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

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	-	-	1.312
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification.			
FY 2014 Plans: N/A			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification.			
Accomplishments/Planned Programs Subtotals	-	-	1.312

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603294C / <i>Common Kill Vehicle Technology</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	46.243	20.024	-	-	-	-	-	-	-	-	-	66.267
MD69: <i>Directed Energy Research</i>	46.243	18.923	-	-	-	-	-	-	-	-	-	65.166
MD40: <i>Program-Wide Support</i>	-	1.101	-	-	-	-	-	-	-	-	-	1.101

MDAP/MAIS Code: 362

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

Note
FY 2014 and 2015 funding is requested in the Weapons Technology Program Element, 0603178C, Project MD69.

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 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	46.944	-	-	-	-
Current President's Budget	20.024	-	-	-	-
Total Adjustments	-26.920	-	-	-	-
• Congressional General Reductions	-0.030	-			
• Congressional Directed Reductions	-24.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.777	-			
• SBIR/STTR Transfer	-0.219	-			
• Other Adjustment	-1.894	-	-	-	-

Change Summary Explanation

The FY 2013 Reduction is a result of Congressional Directed Reductions and SBIR/STTR transfers.

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

Appropriation/Budget Activity 0400 / 3					R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>				Project (Number/Name) MD69 / <i>Directed Energy Research</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD69: <i>Directed Energy Research</i>	46.243	18.923	-	-	-	-	-	-	-	-	-	65.166

The FY 2015 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 and 2015 Base Plans have been transferred to the Weapons Technology Program Element 0603178C, Budget Project MD69

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

	FY 2013	FY 2014	FY 2015
Title: Directed Energy Research	18.923	-	-
Description: Laser Technology Development/Airborne Laser Test Bed Closeout			
FY 2013 Accomplishments:			
-Made investments to mature directed energy technology for missile defense applications			
-Continued development of next-generation kilowatt-class fiber amplifiers. Procured 27 compact fiber amps from Nufern and IPG Photonics. Demonstrated highest power to date, 1.5 kilowatts, from a beam combinable, single fiber amplifier.			
-Continued development of fiber laser beam combining techniques to validate laser combining architectures. Demonstrated ability to coherently combine 21 separate fiber amplifiers, reaching a world record output power of 17.5 kilowatts with near perfect beam quality.			
-Continued development of high power diode-pumped alkali systems. Set multiple world records to include a maximum output power of 3.91 kilowatts and a laser run time of 4 minutes.			
-Conducted experiments to characterize the high altitude, low Mach flight environment. Designed, fabricated, and integrated a platform vibration instrumentation package into the Phantom Eye Unmanned Aerial Vehicle (UAV). Completed an initial flight, collecting data from take off to 28,000 feet.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>	Project (Number/Name) MD69 / <i>Directed Energy Research</i>
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B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
<p>-Removed/de-militarized Airborne Laser Test Bed (ALTB) hardware, fixtures, tooling and government furnished property. Dispositioned 13,000 property line items valued at \$78 million and 1,000 ALTB aircraft parts valued at \$30 million to 36 DoD organizations for re-use.</p> <p><i>FY 2014 Plans:</i> FY 2014 plans have been transferred to the Weapons Technology Program Element 0603178C, Budget Project MD69</p> <p><i>FY 2015 Plans:</i> N/A</p>			
Accomplishments/Planned Programs Subtotals	18.923	-	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	1.101	-	-	-	-	-	-	-	-	-	1.101

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	1.101	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	1.101	-	-

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

N/A

Remarks

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603901C / <i>Directed Energy Research</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 3: Advanced Technology Development (ATD)</i>	R-1 Program Element (Number/Name) PE 0603902C / <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	28.456	58.952	-	-	-	-	-	-	-	-	-	87.408
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	28.456	54.563	-	-	-	-	-	-	-	-	-	83.019
MD40: <i>Program-Wide Support</i>	-	4.389	-	-	-	-	-	-	-	-	-	4.389

MDAP/MAIS Code: 362

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

Note

N/A

A. Mission Description and Budget Item Justification

No funding is requested for SM-3 IIB. On 15 March 2013, the Secretary of Defense announced steps to bolster protection of the Homeland and stay ahead of long range ballistic missile threats. These steps included adding Ground-Based Interceptors, restructuring the Standard Missile-3 Block IIB program and shifting resources to develop advanced kill vehicle technology to improve all ballistic missile defense interceptors that operate outside the Earth's atmosphere. Funding for this effort is captured in the Common Kill Vehicle Program Element 0603294C, budget project MD85.

B. Program Change Summary (\$ in Millions)

	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	224.077	-	-	-	-
Current President's Budget	58.952	-	-	-	-
Total Adjustments	-165.125	-	-	-	-
• Congressional General Reductions	-0.081	-			
• Congressional Directed Reductions	-112.700	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-50.000	-			
• Reprogrammings	3.305	-			
• SBIR/STTR Transfer	-0.733	-			
• Other Adjustment	-4.916	-	-	-	-

Change Summary Explanation

No funding is requested for SM-3 IIB. On 15 March 2013, the Secretary of Defense announced steps to bolster protection of the Homeland and stay ahead of long range ballistic missile threats. These steps included adding Ground-Based Interceptors (GBIs), restructuring the Standard Missile-3 Block IIB program and

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 3: Advanced Technology Development (ATD)</i>	PE 0603902C / <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>

shifting resources to develop advanced kill vehicle technology to improve all ballistic missile defense interceptors that operate outside the Earth's atmosphere. Funding for this effort is captured in the Common Kill Vehicle Program Element 0603294C, budget project MD85.

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603902C / <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	Project (Number/Name) MD70 / <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD70: <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>	28.456	54.563	-	-	-	-	-	-	-	-	-	83.019

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

Note

N/A

A. Mission Description and Budget Item Justification

No funding is requested for SM-3 IIB. On 15 March 2013, the Secretary of Defense announced steps to bolster protection of the Homeland and stay ahead of long range ballistic missile threats. These steps included adding Ground Based Interceptors (GBIs), restructuring the Standard Missile-3 Block IIB program and shifting resources to develop advanced kill vehicle technology to improve all ballistic missile defense interceptors that operate outside the Earth's atmosphere. Funding for this effort is captured in the Common Kill Vehicle Program Element 0603294C, budget project MD85.

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

	FY 2013	FY 2014	FY 2015
Title: Standard Missile-3 Block IIB (SM-3 IIB)	54.563	-	-
Description: N/A			
FY 2013 Accomplishments:			
<ul style="list-style-type: none"> - Planning program to enter SM-3 Block IIB Product Development Phase prior to the Secretary of Defense's restructure of the SM-3 Block IIB program to develop advanced kill vehicle technology. - Initiated modular, open kill vehicle architecture development to support future affordable and adaptable kill vehicle designs. - Developed phased approach to transition matured and advanced kill vehicle technology for agency missile interceptor programs of record (Ground Based Interceptor and future Standard Missile-3 variants). - Initiated unitary kill vehicle concept definition and program planning analysis activities with industry teams. The industry teams will each develop a concept that possesses the technical maturity and reliability to offer an enhanced kill vehicle for the Ground Based Interceptor. - Improved the producibility of analog focal plane array for future Standard Missile variants with the intent of reducing program dependence on foreign sources. - Successfully demonstrated enabling components of an integrated controllable solid propellant attitude control system. - Completed design and test of composite materials for nosecone, guidance section, and kill vehicle bulkhead components. 			
FY 2014 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603902C / <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	Project (Number/Name) MD70 / <i>Standard Missile-3 Block IIB (SM-3 IIB)</i>

B. Accomplishments/Planned Programs (\$ in Millions)	FY 2013	FY 2014	FY 2015
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 Common Kill Vehicle Technology PE 0603294C, budget project MD85. FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	54.563	-	-

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing

Remarks

D. Acquisition Strategy

No funding is requested for SM-3 IIB. On 15 March 2013, the Secretary of Defense announced steps to bolster protection of the Homeland and stay ahead of long range ballistic missile threats. These steps included adding Ground-Based Interceptors (GBIs), restructuring the Standard Missile-3 Block IIB program and shifting resources to develop advanced kill vehicle technology to improve all ballistic missile defense interceptors that operate outside the Earth's atmosphere. Funding for this effort is captured in the Common Kill Vehicle Technology Program Element 0603294C, budget project MD85.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603902C / Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	Project (Number/Name) MD40 / Program-Wide Support
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: Program-Wide Support	-	4.389	-	-	-	-	-	-	-	-	-	4.389

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

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It includes Government Civilians, Contract Support Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and agency training, office and equipment leases, 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 2013	FY 2014	FY 2015
Title: Program Wide Support	4.389	-	-
Description: N/A			
FY 2013 Accomplishments: 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.			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	4.389	-	-

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

Appropriation/Budget Activity 0400 / 3	R-1 Program Element (Number/Name) PE 0603902C / Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	Project (Number/Name) MD40 / Program-Wide Support
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	689.926	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
MD07: <i>THAAD</i>	645.681	192.800	215.627	169.162	-	169.162	190.530	205.837	199.622	211.151	Continuing	Continuing
MC07: <i>Cyber Operations</i>	-	-	0.530	0.647	-	0.647	0.659	0.671	0.683	0.695	Continuing	Continuing
MT07: <i>THAAD Test</i>	-	61.677	24.540	111.366	-	111.366	15.618	62.579	65.497	40.700	Continuing	Continuing
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	35.876	0.961	1.091	1.082	-	1.082	1.217	1.243	1.267	1.298	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	8.369	11.958	14.130	17.341	-	17.341	12.984	18.075	19.352	19.521	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>
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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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	316.929	268.990	309.901	-	309.901
Current President's Budget	267.396	255.918	299.598	-	299.598
Total Adjustments	-49.533	-13.072	-10.303	-	-10.303
• Congressional General Reductions	-0.399	-			
• Congressional Directed Reductions	-15.000	-13.072			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-6.345	-			
• SBIR/STTR Transfer	-3.407	-			
• Other Adjustment	-24.382	-	-10.303	-	-10.303

Change Summary Explanation

The FY 2014 funding reduction was a result of general Congressional reductions. The FY 2015 funding reduced as a result of efficiency reviews and implementation of recommendations from the Test and Target Working Group to lower costs associated with the Integrated Master Test Plan

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD07: <i>THAAD</i>	645.681	192.800	215.627	169.162	-	169.162	190.530	205.837	199.622	211.151	Continuing	Continuing
Quantity of RDT&E Articles	50.000	-	-	-	-	-	-	-	-	-		

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

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

A. Mission Description and Budget Item Justification
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, 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.

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

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 2013	FY 2014	FY 2015
Title: THAAD Development	119.997	132.483	107.459
Articles:	-	-	-
<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-mission engineering analysis supporting testing is included in this task. In addition, it includes funding for Program Operations accomplishments in FY 2013 which has moved to the Program Operations (previously Program Management) accomplishment in FY 2014.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Continued THAAD Build 2.0 development of non-organic intercept debris mitigation -Continued pre-mission analysis for FTO-01, an operational scenario further testing THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with Command & Control, Battle Management and Communications and forward-based Army Navy/Transportable Radar Surveillance and Control. Analysis ensures mission range and public safety and generates system performance predictions for post mission comparison. -Designed, developed, qualification tested, released, and fielded annual release of System Software Support to ensure continued performance and operation of fielded Batteries -Implemented Mandatory Information Assurance Updates and performed Information Assurance Vulnerability Assessments (IAVA) to mitigate potential system vulnerabilities and to ensure continued performance and operation of fielded Batteries -Continued 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 -Continued requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration -Continued Leak Indicator Redesign effort to provide greater safety by increasing the distance the leak indicator can be inspected in case of a hypergolic propellant fuel leak -Continue Suspect Missile Round Handling effort to develop a plan for proper repair or disposal of a THAAD Interceptor in the event of unsafe humidity levels inside the canister or other indications of an unsafe missile round. This effort provides increased safety in case of potential repair, and avoids the unnecessary disposal of an interceptor if repair is possible 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Provided 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>-Provided contractor program management, and subcontract management to ensure effective use of appropriated resources</p> <p>-Executed Terminal High Altitude Area Defense program in compliance with internal and external direction, policies, and regulations to ensure effective use of appropriated resources</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>FY 2014 Plans:</p> <p>-Continue development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements</p> <p>-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)</p> <p>-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)</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration</p> <p>-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</p> <p>-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</p> <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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs and guidance</p> <p>-Complete Missile Round Pallet (MRP) Transport development and qualification to both speed the deployment process and to reduce logistical lifecycle costs of fielding the system</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>Increase in cost from FY 2013 to FY 2014 primarily due to Missile Round Pallet (MRP) Transport development and increased effort in Debris Mitigation Phase II and Modeling and Simulation</p> <p>FY 2015 Plans:</p> <p>-Complete development of Phase II debris mitigation functionality and integrate into the weapon system to improve interoperability with other BMDS elements</p> <p>-Continue 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)</p> <p>-Continue 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</p> <p>-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</p> <p>-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</p> <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 requirements development, engineering analysis, capability integration, and performance verification for BMDS and THAAD element-level development and integration</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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Update THAAD software and hardware to ensure compliance with DoD Weapon System Information Assurance Programs and guidance</p> <p>-Initiate development of the THAAD Launch on Remote-Battery Initiated Launch on Link 16 capability that will allow THAAD batteries to launch on track data received from an external BMDS sensor. This capability enables the THAAD battery to increase its defended area and/or launch area, and enables a battery-initiated engagement to provide an intercept opportunity that would not otherwise be available. Development effort encompasses component THAAD Fire Control and Communication (TFCC) and Radar hardware and software development</p> <p>-Initiate development of Regional Peer to Peer Engagement Coordination which is a real-time automated exchange of coordination messages between Ballistic Missile Defense (BMD) tactical level weapon systems that share defended assets and are capable of engaging a common threat. This allows for the development of shot de-confliction to allow THAAD and other BMD weapon systems (i.e. Aegis BMD) located in a common battle space to prioritize engagement threats. Effort also includes the modification of the TFCC Planner software to provide selectable options for schema implementation, and modifications to the Engagement Ops software to implement the advanced schema</p> <p>-Initiate development to mitigate the effects of Track ID Proliferation through the implementation of BMDS changes approved in MIL-STD-6016 Interface Change Proposals (ICPs) in coordination with Aegis BMD, Command and Control, Battle Management, and Communications (C2BMC) and MDA Engineering. These changes require implementation by all members of the Network Participation Group to be effective</p> <p>-Reduction in cost from FY 2014 to FY 2015 primarily due to completion of Missile Round Pallet (MRP) Transport development and reduced effort in System Software Support and Modeling and Simulation</p>			
<p>Title: THAAD Program Support</p> <p align="right">Articles:</p> <p>Description: In FY 2013, this activity provided maintenance and transportation as well as developed and maintained THAAD training devices. It also provided funding to support the THAAD embedded Army Hybrid Cell which is the staff and internal operating budget that performs and executes the scope of the Program Support Items activity. The Army Hybrid cell is a separate staff from the Program Operations and is composed of combined MDA and Army personnel providing Doctrine, Training, Leadership, Organization, Materiel, Soldier (DTLOMS) support for the THAAD system. In FY 2014 the maintenance and transportation efforts as well as funding for the Army Hybrid Cell were transferred to Operations and Maintenance, Defense Wide (0100D) for sustainment. In FY 2015, Program Support includes efforts such as communications and interoperability, safety and mission assurance and growth reliability verification.</p> <p>FY 2013 Accomplishments:</p>	68.543 -	32.553 -	7.581 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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>-Continued development for Institutional Conduct of Fire Trainer (ICOFT) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Continued development of Radar March Order & Emplacement Trainer (RMOET) for Institutional Training Base to maintain Battery operational capability after soldier rotations</p> <p>-Continued production of Table Top Trainer (TT3) to maintain Battery operational capability after soldier rotations</p> <p>-Initiated spares production for Institutional Training Base (ITB) to maintain training devices</p> <p>-Acquired Range Safety and Instrumentation System (RSIS) kits required to be used in THAAD Interceptors on specific flight tests to meet Range Safety Board requirements</p> <p>-Completed MIL-STD 331C compliance testing as required by the Ignition System Safety Review Board (ISSRB) for certification of the THAAD system for fielding.</p> <p>-Acquired and demonstrated capability of the Missile Stockpile Test Sets (MSTS) to perform factory equivalent missile round testing and software installation on tactically configured missile rounds in both stockpile storage and deployed conditions.</p> <p>FY 2014 Plans:</p> <p>-Continue THAAD Fire Control and Communication (TFCC)-Interoperability development and maintenance to support weapon system interoperability capabilities, joint and service certifications, and net-worthiness certification. Without these certifications, the weapon system would not be authorized to operate on joint, service, or allied communications networks</p> <p>-Complete development of Radar March Order & Emplacement Trainer (RMOET) and complete design for Radar Training Device (RTD) in order for the Institutional Training Base to maintain an enduring radar training capability for THAAD Soldiers</p> <p>-Continue development of the Terminal High Altitude Area Defense (THAAD) Portable Planner and Interface to Command and Control Battle Management and Communications (C2BMC) to provide interactive defense design capability to plan defensive course(s) of action and develop detailed defense plans</p> <p>Reduction from FY 2013 to FY 2014 due to realigning funding to Operations and Maintenance, Defense Wide (0100D) for sustainment as well as the completion of the THAAD Table Top Trainer (TT3), MIL-STD-331C, Missile Stockpile Test Sets (MSTS), and Range Safety and Instrumentation System (RSIS) kit efforts</p> <p>FY 2015 Plans:</p> <p>-Continue THAAD Fire Control and Communication (TFCC)-Interoperability development and maintenance to support weapon system interoperability capabilities, joint and service certifications, and net-worthiness certification. Without these certifications, the weapon system would not be authorized to operate on joint, service, or allied communications networks</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Conduct a Reliability Demonstration Test on a fully operational THAAD Battery for the purpose of demonstrating reliability growth in support of Materiel Release</p> <p>Reduction from FY 2014 to FY 2015 due to the completion of the development efforts associated with training devices Institutional Conduct of Fire Trainer (ICOFT), Radar March Order & Emplacement Trainer (RMOET), and Radar Training Device (RTD)</p> <p>Title: Program Operations</p> <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 2013 Accomplishments: FY 2013 activities are included in MD07 THAAD accomplishments/plans: THAAD Development.</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>Increase is due to realignment of this task from THAAD Development</p> <p>FY 2015 Plans:</p>		-	47.869	49.041
		Articles:	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-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			
Title: Project Redwood- Details at a Higher Classification Description: See Description Below FY 2013 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 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. FY 2015 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.	Articles: 4.260 -	2.722 -	5.081 -
Accomplishments/Planned Programs Subtotals	192.800	215.627	169.162

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0208866C: O&M	221.609	369.371	416.644	-	416.644	421.633	434.974	454.477	459.678	-	2,778.386
• MD07: THAAD Procurement	416.838	571.851	464.424	-	464.424	602.692	533.258	491.026	459.124	Continuing	Continuing

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

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

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

D. Acquisition Strategy

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
THAAD Development - Advanced Capability Development	SS/IDIQ	LMSSC : Sunnyvale, CA/Huntsville, AL	38.722	10.856		48.952	Nov 2013	47.627		-		47.627	Continuing	Continuing	Continuing
THAAD Development - Lockheed Martin	SS/CPFF	LMSSC : Sunnyvale, CA/Huntsville, AL	361.722	24.662		43.008	Nov 2013	22.627		-		22.627	Continuing	Continuing	Continuing
THAAD Development - MDA Program Support	MIPR	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	17.525	62.269		4.195	Nov 2013	11.044		-		11.044	Continuing	Continuing	Continuing
THAAD Development - Models & Simulations	MIPR	US Army Research, Development, Engineering Command (RDECOM) : Huntsville, AL	77.003	22.210		36.328	Nov 2013	26.161		-		26.161	Continuing	Continuing	Continuing
Subtotal			494.972	119.997		132.483		107.459		-		107.459	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
THAAD Program Support - Army Cell to Hybrid Program Office	MIPR	Integrated Material Management Center, AMCOM : Huntsville, AL	11.854	5.771		-		-		-		-	-	17.625	-
THAAD Program Support - MDA Program Support	Various	Missile Defense Agency (MDA) : Huntsville, AL	8.249	-		-		-		-		-	-	8.249	-
THAAD Program Support - Maintenance, Training,	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	22.688	62.772		30.469		-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Transportation and Operations Support															
THAAD Program Support - Mission Support	MIPR	ATEC / OTC / MDA : WSMR, NM / Huntsville, AL	0.000	-		2.084		7.581		-		7.581	Continuing	Continuing	Continuing
Program Operations - Program Operations MDA Program Support	Various	Missile Defense Agency (MDA) : Ft. Belvoir, VA/ Huntsville, AL	54.634	-		47.869	Oct 2013	49.041		-		49.041	Continuing	Continuing	Continuing
Project Redwood- Details at a Higher Classification - Special Programs	SS/FP	N/A : N/A	53.284	4.260		2.722	Oct 2013	5.081		-		5.081	Continuing	Continuing	Continuing
Subtotal			150.709	72.803		83.144		61.703		-		61.703	-	-	-

Remarks
N/A

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

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	645.681	192.800	215.627	169.162	-	169.162	-	-	-

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)	▲																											
Debris Mitigation Phase II Engineering Requirements Review (ERR)					△																							
Flexible Threat Package Engineering Requirements Review (ERR)						△																						
Debris Mitigation Phase II Engineering Design Review (EDR)							△																					
Complete Institutional Conduct of Fire trainer (ICOFT)								△																				
Flexible Threat Package Engineering Design Review (EDR)									△																			
Complete Institutional Training Devices										△																		
Launch on Link 16 Engineering Requirements Review (ERR)											△																	
Regional Peer to Peer Engagement Engineering Requirements Review (ERR)												△																
Launch on Link 16 Engineering Design Review (EDR)													△															
Regional Peer to Peer Engagement Engineering Design Review (EDR)														△														

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD07 / <i>THAAD</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Conduct FTI-01 (GMD/Aegis/THAAD/PATRIOT Multiple Integration Flight Test)	1	2013	1	2013
Debris Mitigation Phase II Engineering Requirements Review (ERR)	2	2014	2	2014
Flexible Threat Package Engineering Requirements Review (ERR)	3	2014	3	2014
Debris Mitigation Phase II Engineering Design Review (EDR)	4	2014	4	2014
Complete Institutional Conduct of Fire trainer (ICOFT)	4	2014	4	2014
Flexible Threat Package Engineering Design Review (EDR)	1	2015	1	2015
Complete Institutional Training Devices	2	2015	2	2015
Launch on Link 16 Engineering Requirements Review (ERR)	4	2015	4	2015
Regional Peer to Peer Engagement Engineering Requirements Review (ERR)	4	2015	4	2015
Launch on Link 16 Engineering Design Review (EDR)	2	2016	2	2016
Regional Peer to Peer Engagement Engineering Design Review (EDR)	2	2016	2	2016

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC07: <i>Cyber Operations</i>	-	-	0.530	0.647	-	0.647	0.659	0.671	0.683	0.695	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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 2013	FY 2014	FY 2015
Title: Network / System Certification and Accreditation (C&A)	-	0.530	0.647
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: - Conduct cyber security / information assurance engineering and architecture planning for THAAD information technology systems - Develop and test cyber security/information assurance control measures for Ballistic Missile Defense System (BMDS) THAAD systems			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Develop THAAD DIACAP certification and accreditation packages - Support Controls Validation Testing (CVT) of THAAD mission, test, and training systems - Develop Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Conduct cyber security / information assurance engineering and architecture planning for THAAD information technology systems - Develop and test cyber security/information assurance control measures for Ballistic Missile Defense System (BMDS) THAAD systems - Develop THAAD DIACAP certification and accreditation packages - Support Controls Validation Testing (CVT) of THAAD mission, test, and training systems - Develop Plan of Action and Milestones (POA&Ms) to resource and remediate information assurance deficiencies - Conduct annual information assurance reviews on the THAAD enclaves to assess compliance in implementing and maintaining IA controls 			
Accomplishments/Planned Programs Subtotals	-	0.530	0.647

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• D1300639: <i>Fort Drum, New York, IDT Complex</i>	23.869	-	-	-	-	-	-	-	-	-	23.869
• D1400634: <i>Clear AFS, AK</i>	-	17.204	-	-	-	-	-	-	-	-	17.204

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MC07 / <i>Cyber Operations</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : Various MDA Locations	0.000	-		0.530	Jul 2014	0.647		-		0.647	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.530		0.647		-		0.647	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.530	0.647	-	0.647	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT07: <i>THAAD Test</i>	-	61.677	24.540	111.366	-	111.366	15.618	62.579	65.497	40.700	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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). In FY 2014 System Test plans are further broken out into Flight Test Execution, Infrastructure, and Ground Test Execution. In FY 2015 Infrastructure plans are broken down into Resources and Wargames & Exercises.

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 Test Execution 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.

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

Infrastructure in FY 2014 and Resources in FY 2015 includes sustained and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.

Wargames & Exercises provides support to the various Combatant Commanders with model and simulations and subject matter expertise during various exercises.

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

	FY 2013	FY 2014	FY 2015
Title: System Test	61.677	-	-
Articles:	-	-	-
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.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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FY 2013 Accomplishments:
 -Continued flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and execution of flight test operations at Reagan Test Site 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 BMDS Command Control / Battle Management and Communications (C2BMC) and forward-based AN/TPY-2
 -Conducted 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
 -Provided 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
 -Provided on-site range support for Terminal High Altitude Area Defense (THAAD) maintenance, repair, and fueling to ensure readiness of the THAAD test assets
 -Sustained and maintained THAAD Launch and Test Support Equipment (L&TSE) to ensure readiness of the THAAD test equipment
 -Continued THAAD participation in Missile Defense Agency (MDA) Ground Test operational scenario events 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)
 -Continued Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)

FY 2014 Plans:
 Plans for this scope are included in MT07 Terminal High Altitude Area Defense (THAAD) plans: Flight Test Execution, Infrastructure, and Ground Test Execution.

FY 2015 Plans:
 Plans for this scope are included in MT07 Terminal High Altitude Area Defense (THAAD) plans: Flight Test Execution, Ground Test, Resources and Wargames & Exercises.

<i>Title:</i> Flight Test Execution	-	12.128	101.313
<i>Articles:</i>	-	-	-
<i>Description:</i> THAAD Flight Test Execution 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.			
<i>FY 2013 Accomplishments:</i>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>Plans for this scope are included in MT07 THAAD plans: System Test.</p> <p>FY 2014 Plans: -Complete Flight Test Operational-01 (FTO-01) post test reporting and data distribution to provide data for analysis and integration into BMDS Modeling and Simulation.</p> <p>Reduction in flight test cost from FY 2013 to FY 2014 due to no flight test being executed in FY 2014. In FY 2013 THAAD planned and executed FTO-01 (BMDS Operational Flight Test) while also conducting post-mission analysis work for FTI-01. In FY 2014, THAAD is not scheduled to conduct any flight tests and plans to complete post-mission analysis work for FTO-01.</p> <p>FY 2015 Plans: -Conduct flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and execution of flight test operations at Wake Island for FTO-02 (BMDS Operational Flight Test) to further demonstrate, in an operational scenario, THAAD's ability to conduct coordinated engagements with Aegis and PATRIOT operating with BMDS Command Control / Battle Management and Communications (C2BMC) and forward-based AN/TPY-2 while engaging a Short Range Ballistic Missile. - Conduct flight test planning, range interface, coordination with Operational Test Agencies (OTAs) and execution of flight test operations at Wake Island for Flight Test THAAD-18 (FTT-18) to demonstrate THAAD's ability to intercept an Intermediate Range Ballistic Missile (IRBM) target using the THAAD radar, launcher, fire control and communications, interceptor closed-loop operations, and engagement functions.</p> <p>- Increase in flight test cost from FY 2014 to FY 2015 due to execution of two of flight tests in FY 2015. In FY 2014 THAAD is not scheduled to plan or conduct any flight tests and plans only to complete post-mission analysis work for FTO-01. In FY 2015 THAAD is scheduled to plan and execute FTO-02 E2 (BMDS Operational Flight Test) and Flight Test THAAD-18 (FTT-18).</p>				
Title: Infrastructure		-	5.540	-
		Articles:	-	-
<p>Description: Infrastructure includes sustainment and maintenance of test equipment and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing.</p> <p>FY 2013 Accomplishments: Plans for this scope are included in MT07 THAAD plans: System Test.</p> <p>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</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Provide on-site range support for Terminal High Altitude Area Defense (THAAD) maintenance, repair, and fueling to ensure readiness of the THAAD test assets</p> <p>-Continued Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)</p> <p>FY 2015 Plans: Plans for this scope are included in MT07 THAAD plans: Resources and Wargames & Exercises</p>				
<p>Title: Ground Test Execution</p> <p>Description: Ground Test Execution includes mission planning, BMDS test integration, conduct of readiness reviews, ground test execution and data collection, post test reporting and data distribution.</p> <p>FY 2013 Accomplishments: Plans for this scope are included in MT07 THAAD plans: System Test.</p> <p>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)</p> <p>-Provide pre-mission planning, pre and post mission analysis, reporting support, and execution to BMDS Ground Test campaigns</p> <p>-Continue Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)</p> <p>FY 2015 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)</p> <p>-Provide pre-mission planning, pre and post mission analysis, reporting support, and execution to BMDS Ground Test campaigns</p> <p>-Continue Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)</p>		-	6.872	4.917
		Articles:	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
-Decrease in cost from FY 2014 to FY 2015 due to completion of Fast Event ground testing in FY 2014				
Title: Resources Description: Resources include sustainment and maintenance of test labs and facilities. It provides maintenance, repair, and fueling of THAAD Battery assets utilized in testing. FY 2013 Accomplishments: N/A FY 2014 Plans: N/A FY 2015 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 -Continue Performance Assessments to evaluate system performance and interoperability within the integrated Ballistic Missile Defense System (BMDS)		-	-	4.957
		Articles:	-	-
Title: Wargames and Exercises Description: See planned accomplishments FY 2013 Accomplishments: N/A FY 2014 Plans: N/A FY 2015 Plans: -Provide support to the various COCOM's with model and simulations and subject matter expertise during the exercise events. Continue to assist in the development/refining of Tactics, Techniques, and Procedures (TTP's) as well as Pre-Planned Responses		-	-	0.179
		Articles:	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
(PPR's) to incorporate in further exercises, ground, and flight test events. Demonstrate THAAD capability and limitations to the warfighter community in the Integrated and Missile Defense (IAMD) environment.			
Accomplishments/Planned Programs Subtotals	61.677	24.540	111.366

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

N/A

Remarks

D. Acquisition Strategy

THAAD awards Indefinite Delivery Indefinite Quantity (IDIQ) Task Orders on the Advanced Capability Development (ACD) contract for the continuation of THAAD 2.0 development and test. The discrete task orders allow management and tracking of Development work.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System Test - BMDS Ground Testing and Flight Test Support	MIPR	US Army AMRDEC : Huntsville, AL	0.000	5.309		-		-		-		-	-	5.309	-
System Test - Flight Test Planning, Analysis, and Execution	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	0.000	19.544		-		-		-		-	-	19.544	-
System Test - Flight Test Range Infrastructure/ Execution	MIPR	Reagan Test Site : Kwajalein Atoll	0.000	4.560		-		-		-		-	-	4.560	-
System Test - Flight Test Support and Planning	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	0.000	32.264		-		-		-		-	-	32.264	-
Flight Test Execution - Execution, Support and Planning	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	0.000	-		-		38.703		-		38.703	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Flight Test Execution - Planning, Analysis, and Execution	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	0.000	-		12.128		62.610		-		62.610	Continuing	Continuing	Continuing
Infrastructure - Range Infrastructure	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	0.000	-		5.540		-		-		-	Continuing	Continuing	Continuing
Infrastructure - Range Infrastructure Prime	Various	LMSSC : Sunnyvale, CA/Huntsville, AL	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Ground Test Execution - BMDS Ground Test Support	MIPR	US Army AMRDEC : Huntsville, AL	0.000	-		4.169		4.917		-		4.917	Continuing	Continuing	Continuing
Ground Test Execution - Support and Planning	Various	MDA : Ft. Belvoir, VA/Huntsville, AL	0.000	-		2.703		-		-		-	Continuing	Continuing	Continuing
Resources - Test and Range Infrastructure	MIPR	Various : Huntsville, AL	0.000	-		-		4.957		-		4.957	Continuing	Continuing	Continuing
Wargames and Exercises - Wargames and Exercises	MIPR	MDA / SMDC : Huntsville, AL	0.000	-		-		0.179		-		0.179	Continuing	Continuing	Continuing
Subtotal			0.000	61.677		24.540		111.366		-		111.366	-	-	-

Remarks
N/A

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency								Date: March 2014					
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MT07 / <i>THAAD Test</i>					
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	61.677		24.540		111.366		-		111.366	-	-	-

Remarks

N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											
FTO-01 (Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)				▲																								
Fast Phoenix (BMDS Ground Test)				△																								
GTI-04e (Part 2 (BMDS Ground Test)					✧	✧																						
Fast Falcon (BMDS Ground Test)								✧																				
Fast Osprey (BMDS Ground Test)								✧																				
GTI-06 Part 1 (BMDS Ground Test)									✧	✧																		
GTI-06 Part 2 (BMDS Ground Test)												✧																
FTT-18 (TH Intercept Flight Test)												▲																
FTO-02 E2 (OTA Intercept Flight Test)												▲																
GTD-06 Part 1a (BMDS Ground Test)													✧															
GTD-06 Part 2 (BMDS Ground Test)														✧	✧													
GTD-06 Part 1b (BMDS Ground Test)															✧													
GTX-07a (BMDS Ground Test)																✧												
GTI-07a (BMDS Ground Test)																	✧											
FTT-15 (TH Intercept Flight Test)																		▲										
GTD-07a Part 2 (BMDS Ground Test)																			✧									
GTD-07a Part 1 (BMDS Ground Test)																				✧								
GTX-07b (BMDS Ground Test)																					✧							
GTI-07b (BMDS Ground Test)																						✧	✧					
GTD-07b Part 2 (BMDS Ground Test)																							✧	✧				
FTO-03 E3 (OTA Intercept Flight Test)																							▲					
GTD-07b Part 1 (BMDS Ground Test)																								✧	✧			
FTT-19 (TH Intercept Flight Test)																												▲

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
FTO-01 (Aegis/THAAD/PATRIOT Multiple Engagement Flight Test)	4	2013	4	2013
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
GTI-04e (Part 2 (BMDS Ground Test)	2	2014	3	2014
Fast Falcon (BMDS Ground Test)	4	2014	4	2014
Fast Osprey (BMDS Ground Test)	4	2014	4	2014
GTI-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
GTD-06 Part 1a (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
GTD-06 Part 1b (BMDS Ground Test)	3	2016	3	2016
GTX-07a (BMDS Ground Test)	4	2016	4	2016
GTI-07a (BMDS Ground Test)	1	2017	1	2017
FTT-15 (TH Intercept Flight Test)	2	2017	2	2017
GTD-07a Part 2 (BMDS Ground Test)	3	2017	3	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
GTX-07b (BMDS Ground Test)	1	2018	1	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	4	2018	4	2018
FTO-03 E3 (OTA Intercept Flight Test)	4	2018	4	2018

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MT07 / <i>THAAD Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
FTT-19 (TH Intercept Flight Test)	4	2019	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>				Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD06: <i>Patriot Advanced Capability-3 (PAC-3)</i>	35.876	0.961	1.091	1.082	-	1.082	1.217	1.243	1.267	1.298	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

Phased Array Tracking Radar Intercept Of Target (PATRIOT) 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 Missile Defense Agency 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 2013	FY 2014	FY 2015
Title: General Support	0.961	1.091	1.082
Articles:	-	-	-
Description: PATRIOT Advanced Capability (PAC-3) is a U.S. Army short range BMDS that interfaces with the Ballistic Missile Defense System. Missile Defense Agency funds PATRIOT participation in BMDS interoperability integration efforts.			
FY 2013 Accomplishments:			
-Supported the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by MDA based on the Transfer and Transition Plan Annex L.			
FY 2014 Plans:			
-Support the day-to-day tasking that is leveraged upon Lower Tier Project Office (LTPO) by MDA based on the Transfer and Transition Plan Annex L.			
FY 2015 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-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	0.961	1.091	1.082

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
General Support - Evolutionary Development Program (EDP) Task 2	SS/FFP	Multiple : Multiple	32.360	-		-		-		-		-	32.360	64.720	32.360
Subtotal			32.360	-		-		-		-		-	32.360	64.720	32.360

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
General Support - General Support	C/FFP	Intuitive Research and Technology / Wyle CAS : Huntsville, AL	3.516	0.961		1.091	Jan 2014	1.082		-		1.082	Continuing	Continuing	Continuing
Subtotal			3.516	0.961		1.091		1.082		-		1.082	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD06 / <i>Patriot Advanced Capability-3 (PAC-3)</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	35.876	0.961	1.091	1.082	-	1.082	-	-	-

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	8.369	11.958	14.130	17.341	-	17.341	12.984	18.075	19.352	19.521	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note
N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	11.958	14.130	17.341
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	11.958	14.130	17.341

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603881C / <i>Ballistic Missile Defense Terminal Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	2.658		0.872	Mar 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	-		-		6.665		-		6.665	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support International and Materiel and Readiness	MIPR	Various : Multi: AL, VA, Aust, Japan	0.000	1.099		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, VA	8.369	7.906		13.258	Jan 2014	10.676	Jan 2015	-		10.676	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	0.000	0.295		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			8.369	11.958		14.130		17.341		-		17.341	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	8.369	11.958	14.130	17.341	-	17.341	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	2,270.548	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
MD08: <i>Ground Based Midcourse</i>	2,222.990	679.108	759.249	763.354	-	763.354	746.987	551.889	491.651	505.671	Continuing	Continuing
MD97: <i>Improved Homeland Defense (HLD) Interceptors</i>	-	-	-	99.500	-	99.500	264.000	261.500	67.000	13.000	Continuing	Continuing
MC08: <i>Cyber Operations</i>	-	-	2.124	2.938	-	2.938	2.957	2.997	3.028	3.105	Continuing	Continuing
MT08: <i>Ground Based Midcourse Test</i>	-	69.419	98.873	79.877	-	79.877	50.667	62.668	82.191	61.695	Continuing	Continuing
MX08: <i>Ground Based Midcourse Development Support</i>	-	129.644	-	-	-	-	-	-	-	-	-	129.644
MD40: <i>Program-Wide Support</i>	47.558	45.335	50.606	58.099	-	58.099	66.449	58.944	46.654	44.871	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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, and Greenland. 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 comprehensive component ground testing that will improve GBI reliability and minimize the number of GBIs required to destroy each ICBM threat.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>
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This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.

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.

The ICBM threat that endangers the United States is projected to make significant progress over the next decade in quantity of threats, in rapid launch timeline with no warning, and in complexity with the use of countermeasures. To counter this evolving threat, MDA intends to upgrade several key components of the BMDS and GMD (i.e., Long Range Discriminating Radar (LRDR) and Discrimination Improvements for Homeland Defense (DIHD)). Additionally, MDA is developing a GMD redesigned Exoatmospheric Kill Vehicle (EKV) that will address the following three areas: design to the evolving threat for increased performance; improve reliability, availability, maintainability, testability, and producibility; and increase in-flight communications to improve usage of off-board sensors information and situational awareness to combatant commanders for enabling new tactics such as shoot-assess-shoot.

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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	903.172	1,033.903	1,045.500	-	1,045.500
Current President's Budget	923.506	910.852	1,003.768	-	1,003.768
Total Adjustments	20.334	-123.051	-41.732	-	-41.732
• Congressional General Reductions	-1.291	-0.195			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	75.000	20.000			
• Congressional Directed Transfers	-	-142.856			
• Reprogrammings	36.572	-			
• SBIR/STTR Transfer	-11.392	-			
• Other Adjustment	-78.555	-	-41.732	-	-41.732

Change Summary Explanation

FY 2014 Congressional add of \$20.000 million for CONUS Interceptor Site and Congressional transfer of \$142.856 million from RDT&E to O&M, Defense-Wide.

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)
0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>

FY 2015 realignment of \$146.218 million to O&M Defense Wide for MDA Ground-based Midcourse Defense (GMD) sustainment operations. Realignment of \$57.414 million for Department of Defense priorities. There were also increases of \$62.400 million for Discrimination Improvement Homeland Defense and \$99.500 million for Improvement of Homeland Defense Interceptors.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD08: <i>Ground Based Midcourse</i>	2,222.990	679.108	759.249	763.354	-	763.354	746.987	551.889	491.651	505.671	Continuing	Continuing
Quantity of RDT&E Articles	5.000	5.000	1.000	-	-	-	-	-	-	-		

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

Note

N/A

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) to support the maximum probability of successful intercepts against limited 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.

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 Return to Intercept (RTI) Systems Engineering and Test activities and establish a spiral manufacturing approach to deliver the remaining CE-II GBIs. GMD is executing a 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 an intercept test mission, Flight Test Ground-based Midcourse Defense-06b (FTG-06b).

In FY 2013, as a result of an unsuccessful Flight Test Ground-Based Midcourse Defense-07 (FTG-07), MDA established a Failure Review Board (FRB) to identify root cause of the Exoatmospheric Kill Vehicle (EKV) separation failure. The most likely root cause has been determined. Design and testing to determine the best mitigation approach is ongoing.

GMD has built sub-assemblies not affected by FTG-06a and FTG-07 root cause failure for the Interceptors (GBIs 34-44) in preparation for Exoatmospheric Kill Vehicle (EKV) final assembly. Once the corrective action is verified through ground and flight testing, EKV final assemblies will be completed followed by operational interceptor deliveries. . GMD will continue development and manufacturing for GBIs 48-58 incorporating Failure Review Board (FRB) resolutions in support of operational requirements, flight testing, and the Reliability Growth Program.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>
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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) Fielding of 30 interceptors to defend the United States; 2) EKV improvements to increase probability of intercept; 3) Developed and delivered multiple fire control and EKV software versions; 4) Increased integration with Space Based Infrared Systems (SBIRS) increment 2; 5) Improved usage of off-board sensor data for EKV end-game target selection; 6) Completed 4 flight tests (FTG-06, FTG-06a, CTV-01, and FTG-07) with two additional flight tests planned (FTG-06b, FTG-09); 7) Completed 1 ground test campaign (GT-03) and another ground test campaign is ongoing (GT-04); and 8) Increased interoperability with Sea Based X-Band Radar (SBX) for improving sensor to interceptor performance.

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) Fielding 44 interceptors to defend the United States (SECDEF Direction); 2) Increasing design complexity of threat space from single threat to multiple threats; 3) Delivering 11 additional interceptors (GBIs 48-58); 4) Increasing interceptor reliability; 5) Improving Fire Control and Exoatmospheric Kill Vehicle (EKV) discrimination capabilities; 6) Planned 2 flight tests (FTG-13 and FTG-15); 7) Planned 2 ground test campaigns (GT-06 and GT-07); and 8) Develop and deliver multiple fire control and EKV software versions.

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Ground-based Midcourse Defense will improve the EKV usage of off-board sensor discrimination data, update the EKV onboard discrimination capability, improve GMD Fire Control system (GFC) salvo management, and conduct element and system level testing to support Near, Mid, and Far-term phases.

In FY 2013, the Secretary of Defense directed the Agency to increase the fielded fleet from 30 to 44 GBIs in FY 2017 to bolster the defense of the Homeland and to address a growing North Korean threat. Initial fielding can be achieved by reallocating GBIs from the program's spares, test and reliability program and emplacing them to achieve the initial 44 GBI capability in FY2017. GMD will acquire an additional 14 GBIs to maintain a fleet of 44 past FY 2017. The MDA is committed to a "Fly-before-you-Buy" approach with the additional 14 GBIs, this approach ensures that designs are qualified and tested before being deployed for operational use. The schedule for these additional GBIs will be predicated on the design and testing of the GMD redesigned EKV, upcoming non-intercept and intercept flight tests, and the GMD Interceptor and Component Reliability Program.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Ground Based Interceptor</p> <p style="text-align: right;">Articles:</p> <p>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 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 demonstrate interceptor performance as part of the Return to Intercept (RTI) program. 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</p>	<p>414.167</p> <p>5.000</p>	<p>431.029</p> <p>1.000</p>	<p>427.414</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>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. A DSC option was exercised in FY 2013 for the acquisition of six additional Ground Based Interceptors (GBIs 53-58) to support operational and testing requirements.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Successfully conducted Control Test Vehicle (CTV)-01 flight test using Capability Enhancement (CE)-II Exoatmospheric Kill Vehicle (EKV) utilizing a cradled Inertial Measurement Unit (IMU) with V0 firmware -Conducted FTG-07 flight test using Capability Enhancement (CE)-I Exoatmospheric Kill Vehicle (EKV) resulting in a failure to intercept. MDA established a Failure Review Board (FRB) to identify root cause of the EKV separation failure. Design and testing to determine the best mitigation approach is ongoing -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 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 -Continued the repurposing of one operational GBI to support Ground-based Midcourse Defense (GMD) Return to Intercept (RTI) series: FTG-06b Backup -Continued incorporation of RTI resolution findings into GBI fleet -Continued GBI Software Builds and Sustainment to support operational and flight test objectives -Continued 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 -Continued acquisition of five Interceptors (GBIs 48-52) that are supported by the completion of the booster and EKV component purchases -Continued EKV Divert and Attitude Control System (DACS) Alternate Thruster design -Initiated acquisition of six additional Interceptors (GBIs 53-58) to support enhanced GMD testing -Continued Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACS) Alternate Divert Thruster design and completed proof of concept with Alternate Divert Thruster using work-horse configuration <p>FY 2014 Plans:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Continue Ground Based Interceptors (GBI) Fleet Upgrade program to include fielded Capability Enhancement II (CE-II) GBIs -Continue acquisition of remaining CE-II (Legacy) Ground Based Interceptors (GBIs 34-44) and proceed to the CE-II intercept flight test (FTG-06b) in 3rd quarter FY 2014, after the successful intercept test, the remaining CE-II GBIs will begin delivering for operational emplacements -Continue acquisition of CE-II (Configuration 2 (C2) boosters with Consolidated Booster Avionics Upgrade (CBAU) and CE-II Block I Exoatmospheric Kill Vehicles (EKV)) GBIs 48-58 to support both operations and testing, including a flight test to demonstrate the capability of the CE-II Block 1 EKV with C2 CBAU booster GBIs -Continue GBI Software Builds and Sustainment to support operational and flight test objectives -Complete development and testing of EKV design modifications to mitigate FTG-07 flight test failure -Complete the Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACs) Alternate Thruster design qualification to increase GBI reliability -Continue flight test rotation program of fielded GBIs to support the Integrated Master Test Plan (IMTP) requirements and the Component Reliability Program -Continue Upgrades and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs -Continue the GBI Reliability Growth Testing Program and the Component Reliability Programs to eliminate known risks and identify reliability improvements for GBI component hardware -Continue to collect Reliability, Availability, Maintainability and Test (RAM-T) data and calculate and track performance metrics on the Operational System -Continue Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACs) and complete Alternate Divert Thruster Design Verification Testing (DVT) and Qualification testing -Develop the capability for the EKV to utilize sensor inputs in support of Discrimination Improvements for Homeland Defense (DIHD) Near-term capability -Complete development of ground test campaign requirements for DIHD Near-term improvements <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -Continue Ground Based Interceptor (GBI) Fleet Upgrade program to include fielded Capability Enhancement II (CE-II) GBIs -Complete acquisition of remaining CE-II (Legacy) Ground Based Interceptors (GBIs 34-44) -Continue acquisition of CE-II (Configuration 2 (C2) boosters with Consolidated Booster Avionics Upgrade (CBAU) and CE-II Block I Exoatmospheric Kill Vehicles (EKV) Ground Based Interceptors (GBIs 48-58) to support both operations and testing, including a flight test to demonstrate the capability of the CE-II Block 1 with C2 CBAU booster GBIs -Continue flight test rotation program of fielded GBIs to support the Integrated Master Test Plan (IMTP) requirements and the Component Reliability Program -Continue Upgrades and Limited Life Item Hardware purchases that will be used to upgrade the fielded GBIs 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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> <p>-Incorporate FTG-07 flight test failure mitigation redesign into the planned GBI deliveries</p> <p>-Develop, Test and Field a near term discrimination (NTD) capability Exoatmospheric Kill Vehicle (EKV) software</p> <p>-Complete Discrimination Improvements for Homeland Defense (DIHD) Near-term capability developments</p> <p>-Complete integration phase of DIHD Near-term ground testing via GTI-06-Complete Exoatmospheric Kill Vehicle (EKV) Divert and Attitude Control System (DACS) Alternate Divert Thruster design qualification to increase GBI reliability and initiate production and retrofit of Interceptors with new Alternate Divert Thruster</p>			
<p>Title: Systems Engineering and Program Management</p> <p align="right">Articles:</p>	100.826	128.970	132.895
<p>Description: Ground-based Midcourse Defense (GMD) Systems Engineering and Program Management provide essential services for the development and fielding of the GMD hardware and software and Industry Program Management operations. 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 infrastructure to develop, test and sustain the GMD system and components.</p> <p>FY 2013 Accomplishments:</p> <p>-Continued 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>-Continued Technical Performance Measurement (TPM) program to assess the current Ground-based Midcourse Defense (GMD) capabilities against the evolving BMDS threat</p> <p>-Continued modeling and simulation development and integration to assess component and system performance in support of annual Technical Assessments</p> <p>-Continued modeling and simulation verification and validation to establish high confidence in Warfighter assessments</p>	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>

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

	FY 2013	FY 2014	FY 2015
<p>-Supported 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>-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</p> <p>-Utilized Exoatmospheric Kill Vehicle (EKV) Hardware-In-The-Loop (HWIL) 10-foot vacuum space chamber (10V Chamber) Operational analysis against emerging threats (KN-08),for Pre-Mission Testing and Post Flight analysis and 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>-Provided 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>FY 2014 Plans:</p> <p>-Redefine GMD threat space from single threat system to multiple threat system and perform systems engineering activities to increase performance</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration</p> <p>-Continue effort to assess the current GMD capabilities against the evolving threat</p> <p>-Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical 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>-Support 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 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 Exoatmospheric Kill Vehicle (EKV) HWIL 10-foot vacuum space chamber (10V Chamber) for operational analysis of emerging threats and Pre-Mission Testing and Post Flight analysis and 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>			

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

	FY 2013	FY 2014	FY 2015
<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>-Develop, Test and Field a near term discrimination (NTD) capability through GMD Fire Control system (GFC)and Exoatmospheric Kill Vehicle (EKV) software</p> <p>-Develop the capability for GFC and EKV to utilize sensor inputs in support of Discrimination Improvements for Homeland Defense (DIHD) Near-Term capability</p> <p>-Complete development of ground test campaign requirements for DIHD Near-Term improvements</p> <p>-Conduct data collection and analysis for final assessment of discrimination technology candidates planned for DIHD Mid-term improvements</p> <p>-Initiate the purchase and installation of the additional hardware to represent current and future capabilities at existing GMD Models & Simulations venues (Integrated System Test Capability lab, Boeing GMD Simulation Lab, and AMRDEC Labs) in testing and performance assessments</p> <p>FY 2015 Plans:</p> <p>-Continue requirements development, engineering analysis, capability integration, and performance verification for GMD development and BMDS integration</p> <p>-Continue effort to assess the current GMD capabilities against the evolving threat</p> <p>-Continue modeling and simulation development and integration to assess component and system performance in support of annual Technical 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>-Support 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 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 Exoatmospheric Kill Vehicle (EKV) HWIL 10-foot vacuum space chamber (10V Chamber) for operational analysis of emerging threats and Pre-Mission Testing and Post Flight analysis and 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>-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>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Develop, Test and Field a near term discrimination (NTD) capability through GMD Fire Control system (GFC) and Exoatmospheric Kill Vehicle (EKV) software</p> <p>-Complete Discrimination Improvements for Homeland Defense (DIHD) Near-Term capability developments</p> <p>-Complete integration phase of DIHD Near-Term ground testing via GTI-06</p>				
<p>Title: Program Operations</p> <p align="right">Articles:</p> <p>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.</p> <p>FY 2013 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, to the Program Director with critical program status and decision quality data</p> <p>-Provided 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>-Ensured GMD program compliance with internal and external direction, policies, and regulations to deliver capability critical within a consistent and disciplined process</p> <p>-Conducted internal Baseline Execution Reviews (BER) to measure program progress against the six MDA 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> <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 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 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>		93.907 -	91.706 -	81.050 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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> <p>FY 2015 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 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>			
<p>Title: Ground Systems</p> <p align="right">Articles:</p> <p>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 system, 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 and Launch Equipment (CLE), which includes Launch Support Equipment (LSE).</p> <p>FY 2013 Accomplishments:</p> <p>-Continued Ground Systems suite 6B3 development 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</p>	70.208 -	107.544 -	121.995 -

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Completed 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</p> <p>-Initiated refurbishment efforts for the Fort Greely, AK Missile Field-1 (MF-1)</p> <p>FY 2014 Plans:</p> <p>-Deliver Ground Systems suite 6B3 to utilize Near-Term Discrimination (NTD) data, integrate the Clear, AK and Cape Cod, MA UEWR and Ft. Drum, NY IDT assets, support SBIRS interface changes, incorporate evolving threats, Warfighter requirements, and BMDS element interoperability associated changes</p> <p>-Continue Ground Systems suite 6B3 software upgrade to develop Near-Term Discrimination (NTD) capability, and design and develop Discrimination Improvements for Homeland Defense (DIHD) near term discrimination capability. Continue limited Reliability/Obsolescence/Technology Refresh of the Ground System hardware</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 refurbishment, upgrade, blast shielding, and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska</p> <p>-Upgrade Command Launch Equipment (CLE) software and hardware to interface with the new tactical 3 Stage C2 (CBAU) Ground-Based Interceptor (GBI)</p> <p>-Upgrade of Telemetry and other Non-Tactical Equipment (NTE) at the Vandenberg AFB Launch Control Center (LCC)</p> <p>-Initiate the CONUS Interceptor Site (CIS) environmental impact statements</p> <p>-Develop the capability for GMD Fire Control system (GFC) to utilize sensor inputs in support of Discrimination Improvements for Homeland Defense (DIHD) Near-Term capability</p> <p>-Complete development of ground test campaign requirements for DIHD Near-Term improvements</p> <p>FY 2015 Plans:</p> <p>-Complete DIHD Near-Term capability developments</p> <p>-Test Ground Systems suite 6B3 software upgrade for Near-Term Discrimination (NTD) capability, and DIHD near term discrimination capability, including limited Reliability/Obsolescence/Technology Refresh of the Ground System hardware</p> <p>-Complete integration phase of DIHD Near-Term ground testing via GTI-06</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>-Continue the Ground Systems Technology Refresh effort which provides upgrades to the Ground Systems components by reducing life cycle costs and ensuring sustainability</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Continue the refurbishment, upgrade, blast shielding, and High Altitude Electromagnetic Pulse (HEMP) hardening of Missile Field 1 at Fort Greely, Alaska -Initiate design and development of Ground Systems suite 6B3 upgrade for DIHD Mid-Term discrimination capability Increase due to the addition of Discrimination Improvements for Homeland Defense (DIHD)			
Accomplishments/Planned Programs Subtotals	679.108	759.249	763.354

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

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 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

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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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				MD08 / Ground Based Midcourse							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Based Interceptor - Alternate Thruster Program	MIPR	NASA White Sands Test Facility (WSTF) : NM	0.000	5.799		3.594		-		-		-	-	9.393	-
Ground Based Interceptor - GBI Component Lab Testing	MIPR	NASA WSTF, NM : AMRDEC, Huntsville, AL	0.000	4.771		-		-		-		-	Continuing	Continuing	Continuing
Ground Based Interceptor - GBI Prime Product Support	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	0.000	1.072		42.335		51.561		-		51.561	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors 34-44	MIPR	NSWC Crane, IN; AMCOM Safety Office, Huntsville, AL : Corvid, HSV, AL; Interstate Electronics Corp, CA	0.000	0.134		-		-		-		-	Continuing	Continuing	Continuing
Ground Based Interceptor - Ground Based Interceptors 48-58	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	30.494	57.509		117.680		113.445		-		113.445	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Alternate Thruster Program	SS/CPAF	Boeing AL/AK/AZ : CA/CO/TX/VA	27.400	40.577		37.885		12.900		-		12.900	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime GBI Component Lab Testing	C/CPIF	Boeing AL/AK/AZ/ CA : CO/TX/VA	47.756	11.623		0.021		2.709		-		2.709	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Ground Based Interceptors 34-44	SS/CPAF	Boeing AL/AK/AZ : CA/CO/TX/VA	621.812	126.868		49.455		121.255		-		121.255	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime New Interceptor Development	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	97.309	41.498		32.230		29.707		-		29.707	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Reliability Program	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	24.532	16.374		26.768		26.495		-		26.495	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Based Interceptor - Prime Return to Intercept Program	SS/CPAF	Boeing AL/AK/AZ : CA/CO/TX/VA	0.000	91.944		47.381		20.500		-		20.500	-	159.825	-
Ground Based Interceptor - Prime Software Maintenance & Updates	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	16.107	5.777		6.371		16.989		-		16.989	Continuing	Continuing	Continuing
Ground Based Interceptor - Prime Upgrades & Operational Spares	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	138.758	-		29.243		17.434		-		17.434	Continuing	Continuing	Continuing
Ground Based Interceptor - Reliability Program	MIPR	AMRDEC / Redstone Arsenal, AL : NSWC Crane, Indiana	0.000	1.088		6.507		7.796		-		7.796	Continuing	Continuing	Continuing
Ground Based Interceptor - Return to Intercept Program	MIPR	NASA MSFC, Huntsville, AL; AMRDEC, Huntsville, AL : Draper Laboratory, MA; Vanguard, Huntsville, AL	0.000	1.008		2.161		2.193		-		2.193	Continuing	Continuing	Continuing
Ground Based Interceptor - Rotations for Ballistic Missile Defense System Level Testing	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	239.006	6.804		26.514		4.110		-		4.110	Continuing	Continuing	Continuing
Ground Based Interceptor - Upgrades and Operational Spares	MIPR	NSWC / Crane, Indiana : AMCOM Safety Office / Huntsville, AL	0.000	0.197		-		-		-		-	-	0.197	-
Ground Based Interceptor - Upgrades for BMDS Level Testing	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	0.000	1.124		2.884		0.320		-		0.320	Continuing	Continuing	Continuing
Ground Systems - BCN Global Net	MIPR	Various : AL/VA	0.000	1.298		-		-		-		-	Continuing	Continuing	Continuing
Ground Systems - CONUS Interceptor Site Studies	MIPR	Various : AL/VA	0.000	3.327		10.000		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603882C / Ballistic Missile Defense Midcourse Defense Segment				MD08 / Ground Based Midcourse							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Ground Systems - Communications Infrastructure	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	0.000	-		7.943		0.810		-		0.810	Continuing	Continuing	Continuing
Ground Systems - FGA Future Power Plant Integration	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	0.000	4.510		-		-		-		-	-	4.510	-
Ground Systems - FGA Improvements	MIPR	Various : AL/AK/VA	0.000	3.804		-		-		-		-	Continuing	Continuing	Continuing
Ground Systems - Fort Drum IDT	MIPR	MDA/AL : /VA/NY	0.000	0.093		1.803		0.525		-		0.525	Continuing	Continuing	Continuing
Ground Systems - Ft Drum IESS	MIPR	Various : AL/NY/VA	0.000	0.531		-		-		-		-	Continuing	Continuing	Continuing
Ground Systems - Ground Systems Software Development	MIPR	Various : AL/AK/AZ/ CA/CO/VA	0.000	-		0.615		0.025		-		0.025	Continuing	Continuing	Continuing
Ground Systems - MF-1 Repair and Refurbishment	MIPR	Various : AL/AK/VA	0.000	3.770		15.968		17.120		-		17.120	Continuing	Continuing	Continuing
Ground Systems - Prime Fort Drum IDT	C/CPIF	Boeing AL : CO/NY/ VA	4.653	0.712		1.434		4.350		-		4.350	Continuing	Continuing	Continuing
Ground Systems - Prime Ground Systems Software Development	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	90.154	50.778		47.654		72.526		-		72.526	Continuing	Continuing	Continuing
Ground Systems - Prime MF-1 Repair and Refurbishment	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	0.000	-		7.944		17.221		-		17.221	Continuing	Continuing	Continuing
Ground Systems - Storage State MF-1	C/CPIF	Boeing AL/AK/AZ : CA/CO	0.000	0.500		-		-		-		-	-	0.500	-
Ground Systems - Technology Refresh	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	0.000	-		10.480		9.380		-		9.380	Continuing	Continuing	Continuing
Ground Systems - Upgrades for BMDS Level Testing	C/CPIF	Boeing AL/AK/AZ : CA/CO/VA	0.559	0.885		3.703		0.038		-		0.038	Continuing	Continuing	Continuing
Subtotal			1,338.540	484.375		538.573		549.409		-		549.409	-	-	-

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering and Program Management - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	118.223	29.063		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering and Program Management - EKV HWIL Tests in Space Chamber	MIPR	AEDC : Tullahoma, TN	0.000	4.475		5.000		5.043		-		5.043	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Model & Simulations Support	MIPR	Various : AL/VA	0.000	-		11.603		9.875		-		9.875	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Modeling and Simulation	MIPR	SED and McMorrow Labs : Redstone Arsenal/AL	0.000	16.113		11.700		5.879		-		5.879	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime EKV HWIL Tests in Space Chamber	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	58.809	2.414		2.349		2.084		-		2.084	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Prime Modeling and Simulation	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	110.518	9.421		18.752		21.318		-		21.318	Continuing	Continuing	Continuing
Systems Engineering and Program Management -	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	218.365	11.641		20.145		26.609		-		26.609	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Prime System Engineering and Integration															
Systems Engineering and Program Management - Prime-Program Management	C/CPIF	Boeing AL/AK/AZ : CA/CO/TX/VA	0.000	26.347		43.752		50.364		-		50.364	Continuing	Continuing	Continuing
Systems Engineering and Program Management - System Engineering and Integration	MIPR	MDA ARC / Colsa : Huntsville, AL	0.000	1.352		0.969		0.988		-		0.988	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis	MIPR	Various : AL/VA	0.000	-		9.607		7.528		-		7.528	Continuing	Continuing	Continuing
Systems Engineering and Program Management - Systems Engineering & Analysis - Industry Support	C/CPAF	Boeing : AL	0.000	-		5.093		3.207		-		3.207	Continuing	Continuing	Continuing
Program Operations - Contract Support Services	C/CPFF	Various : AL/AK/CA/CO/VA	228.492	44.009		35.077		36.355		-		36.355	Continuing	Continuing	Continuing
Program Operations - FFRDC Support	MIPR	MIT/LL : AL/VA/CO	21.984	5.759		1.682		1.175		-		1.175	Continuing	Continuing	Continuing
Program Operations - Government Furnished Equipment	MIPR	MDA : AL/AK/CA/VA	0.000	-		2.976		4.667		-		4.667	Continuing	Continuing	Continuing
Program Operations - Govt Civilian Salaries	MIPR	MDA : AL/VA	105.312	37.138		31.421		32.018		-		32.018	Continuing	Continuing	Continuing
Program Operations - Misc Software/BB/PCS	MIPR	MDA : AL/CA/VA/CO/AK	0.137	1.175		0.633		0.395		-		0.395	Continuing	Continuing	Continuing
Program Operations - Other Govt Agencies	MIPR	Various : AL/VA/FL/CO	20.275	4.508		4.609		4.697		-		4.697	Continuing	Continuing	Continuing
Program Operations - Safety and Quality	MIPR	MDA : AL/AK/CA/VA	0.335	0.055		0.025		0.074		-		0.074	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Operations - Small Business Innovation Research (SBIR)	MIPR	MDA : AL/VA	0.000	-		13.926		0.313		-		0.313	Continuing	Continuing	Continuing
Program Operations - Travel	MIPR	MDA : AL/VA	2.000	1.263		1.357		1.356		-		1.356	Continuing	Continuing	Continuing
Subtotal			884.450	194.733		220.676		213.945		-		213.945	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2,222.990	679.108	759.249	763.354	-	763.354	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency							Date: March 2014		
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>			Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>			
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Fort Greely, Alaska Power Plant	✦																											
Ground-based Midcourse Defense Ground Test-04 test campaign	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧																
Fort Drum, NY IDT	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧												
Ground Based Interceptors (34-44)	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧				
Ground Based Interceptors (48-58)	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Ground Based Interceptors Rotation and Upgrades	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Missile Field 1 Refurbishment and Upgrade					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧												

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD08 / <i>Ground Based Midcourse</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Fort Greely, Alaska Power Plant	1	2013	1	2013
Ground-based Midcourse Defense Ground Test-04 test campaign	1	2013	2	2015
Fort Drum, NY IDT	1	2013	1	2016
Ground Based Interceptors (34-44)	1	2013	1	2016
Ground Based Interceptors (48-58)	1	2013	4	2017
Ground Based Interceptors Rotation and Upgrades	1	2013	4	2019
Ground Systems 6B3 near term discrimination (NTD) and DIHD Near Term (FQT)	1	2014	1	2015
Missile Field 1 Refurbishment and Upgrade	1	2014	4	2016
Ground Systems 6B3.2 DIHD Mid Term (FQT)	1	2016	3	2016

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>				Project (Number/Name) MD97 / <i>Improved Homeland Defense (HLD) Interceptors</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD97: <i>Improved Homeland Defense (HLD) Interceptors</i>	-	-	-	99.500	-	99.500	264.000	261.500	67.000	13.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The ICBM threat that endangers the United States is projected to make significant progress over the next decade in quantity of threats, in rapid launch timeline with no warning, and in complexity with the use of countermeasures. To counter this evolving threat, MDA intends to upgrade several key components of the BMDS (i.e., Long Range Discriminating Radar (LRDR) and Discrimination Improvements for Homeland Defense (DIHD)) and for the GMD program this includes a new Ground-Based Midcourse Defense (GMD) redesigned Exoatmospheric Kill Vehicle (EKV). The redesigned GMD EKV will address the following three areas: design to the evolving threat for increased performance; improve reliability, availability, maintainability, testability, and producibility; and increase in-flight communications to improve usage of off-board sensors information and situational awareness to combatant commanders for enabling new tactics such as shoot-assess-shoot.

The program may leverage technologies that influence manufacturing and design from 0603294C: Common Kill Vehicle Technology program.

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

	FY 2013	FY 2014	FY 2015
Title: Improved Homeland Defense (HLD) Interceptors	-	-	99.500
Articles:	-	-	-
Description: Improved Homeland Defense Interceptor provides for capability improvements to the Ground-based Midcourse Defense (GMD) component of the Ballistic Missile Defense System (BMDS). Improvements will include design work for reliability and performance updates common to the current Exoatmospheric Kill Vehicle (EKV) and GMD redesigned (EKV) (leveraging Common Kill Vehicle Technology) built with a modular, open architecture and designed to common interfaces and standards, making upgrades easier and broadening the vendor and supplier base. Additionally, the GMD redesigned EKV will address the following three areas: design to the evolving threat for increased performance; improve reliability, availability, performance and producibility; and increase in-flight communications to improve usage of off-board sensors information and situational awareness to combatant commanders for enabling new tactics such as shoot-assess-shoot. To fully comprehend the planned GMD redesigned EKV improvements, GMD will develop and deploy improvements to the Ground Systems architecture for increased in-flight communications and both GMD redesigned EKV and fire control software to improve the effectiveness of on-board and off-board discrimination.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD97 / <i>Improved Homeland Defense (HLD) Interceptors</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans: N/A</p> <p>FY 2015 Plans: -Continue EKV design work for reliability and performance updates including hardware and software common to current EKV and GMD redesigned EKV -Initiate development efforts to Improve Homeland Defense for a GMD redesigned Exoatmospheric Kill Vehicle (EKV) and Ground Systems upgrades -Initiate long-lead material acquisitions to support qualification testing and flight test interceptors -Continue the Ground Based Interceptor (GBI) Reliability Program and the Component Reliability Programs to support and eliminate known risks and identify reliability improvements for the EKV GBI component hardware -Initiate development efforts to Improve Homeland Defense for a GMD redesigned Exoatmospheric Kill Vehicle (EKV) and Ground Systems upgrades -Conduct trade studies for various technologies to include in the GMD redesigned EKV -Initiate and complete System Requirements Review for GMD redesigned EKV -Initiate activities to support an FY 2016 Preliminary Design Review and Critical Design Review -Continue EKV design work for reliability and performance updates including hardware and software common to current EKV and GMD redesigned EKV -Initiate long-lead material acquisitions to support qualification testing and flight test interceptors -Continue the Ground Based Interceptor (GBI) Reliability Program and the Component Reliability Programs to support and eliminate known risks and identify reliability improvements for the GMD redesigned EKV GBI component hardware</p>			
Accomplishments/Planned Programs Subtotals	-	-	99.500

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603294C: <i>Common Kill Vehicle Technology</i>	-	70.000	25.639	-	25.639	33.171	37.348	38.454	54.256	Continuing	Continuing

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD97 / <i>Improved Homeland Defense (HLD) Interceptors</i>

D. Acquisition Strategy

The Missile Defense Agency (MDA) Ground-based Midcourse Defense (GMD) Joint Program Office is conducting market research to determine industry interest, risk, and capability to provide GMD's redesigned Exoatmospheric Kill Vehicle (EKV). Included in the market research for the redesigned EKV is industry's ability to successfully design, qualify, integrate and test a redesigned EKV that is more reliable, available, maintainable, testable, producible, and cost effective. The MDA also seeks to understand industry capabilities to support flight testing of GMD's redesigned EKV as early as fiscal year 2018 and industry's assessment of potential concurrency risks between development and manufacturing of both test and tactical hardware. Additionally, this research will also help determine industry capability in not only delivering a redesigned GMD EKV test articles, but also manufacturing, delivering of fully integrated GBIs with the designed EKV. Once the market research is completed, the MDA will determine the Acquisition Strategy for acquiring the design, development, qualification and testing of the redesigned EKV. The MDA intends to award a contract for the redesigned EKV by FY 2015.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD97 / <i>Improved Homeland Defense (HLD) Interceptors</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Improved Homeland Defense (HLD) Interceptors - EKV Development	C/TBD	TBD : TBD	0.000	-		-		79.500		-		79.500	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		79.500		-		79.500	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Improved Homeland Defense (HLD) Interceptors - EKV System and Component Engineering	C/TBD	TBD : TBD	0.000	-		-		20.000		-		20.000	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		20.000		-		20.000	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-	99.500	-	99.500	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC08: <i>Cyber Operations</i>	-	-	2.124	2.938	-	2.938	2.957	2.997	3.028	3.105	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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 2013	FY 2014	FY 2015
<p>Title: Network / System Certification and Accreditation (C&A)</p> <p style="text-align: right;">Articles:</p> <p>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.</p> <p>FY 2013 Accomplishments:</p>	<p>-</p> <p>-</p>	<p>2.124</p> <p>-</p>	<p>2.938</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>A new Cyber Operations budget project (MC08) was created for FY 2014 - previous efforts funded from budget project MD08</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -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>FY 2015 Plans:</p> <ul style="list-style-type: none"> -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 				
Accomplishments/Planned Programs Subtotals		-	2.124	2.938
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>

<u>E. Performance Metrics</u> N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency											Date: March 2014				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>					Project (Number/Name) MC08 / <i>Cyber Operations</i>				

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network / System Certification and Accreditation (C&A) - BMDS CND/IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton : MDA AL	0.000	-		0.540	Jul 2014	0.541		-		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	-		1.425	Jul 2014	1.425		-		1.425	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Civilian Salaries	MIPR	MDA : AL/VA	0.000	-		0.159	Oct 2013	0.972		-		0.972	Continuing	Continuing	Continuing
Subtotal			0.000	-		2.124		2.938		-		2.938	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	2.124	2.938	-	2.938	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GMD Cybersecurity Mitigation Monitoring and Tracking					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Cybersecurity Program Policy / Risk Management					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Information Assurance Certification and Accreditation (C&A) Package Preparation/Submission					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
GMD Transition to Cybersecurity Risk Management Framework (CRMF)					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
BMDS Cybersecurity Policy Development					✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MC08 / <i>Cyber Operations</i>

Schedule Details

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>				Project (Number/Name) MT08 / <i>Ground Based Midcourse Test</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT08: <i>Ground Based Midcourse Test</i>	-	69.419	98.873	79.877	-	79.877	50.667	62.668	82.191	61.695	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

Ground-based Midcourse Test consists of three accomplishment areas; Resources, Flight Test Execution, and Ground Test Execution. Resources consist of the support and framework required to successfully conduct both flight and ground testing. Flight Test Execution and Ground Test Execution 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 2013	FY 2014	FY 2015
Title: Resources	18.111	22.475	18.474
Articles:	-	-	-
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 2013 Accomplishments:			
-Provided 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			
-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 (GMD) system from Colorado Springs, CO			
-Supported pre- and post-flight test mission communications to include fulfillment of Government Furnished Equipment (GFE) / Government Furnished Services (GFS) requirements and data analysis			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<p>-Provided System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs</p> <p>-Supported 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>FY 2015 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>-Provide engineering support for planning and execution of the test events, including test architecture, objectives and assessment criteria, target requirements, M&S for pre-test assessment and post-test review, and develop and establish hardware-in-the-loop (HWIL) M&S integration test cases.</p> <p>Decrease due to HWIL support moving to MD08 Systems Engineering & Program Management</p>			
Title: Flight Test Execution	47.633	71.076	57.047

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p align="right"><i>Articles:</i></p> <p>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.</p> <p>FY 2013 Accomplishments: -Completed successful non-intercept test, Controlled Test Vehicle (CTV-01), to verify FTG-06a corrective actions. The test was 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 was no target for this test -Initiated and completed planning and execution for Flight Test Ground-based Midcourse Defense-07 (FTG-07), a 3-stage Capability Enhancement I (CE-I) intercept engagement without associated objects, using a GBI launch from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS). However, due to a test failure, post-test analysis was not completed. A Failure Review Board was established and is ongoing to determine root cause -Continued planning 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) -Initiated 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 Air-launched Intermediate Range Ballistic Missile (IRBM) target -Initiated salvo range infrastructure upgrade studies in preparation for 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</p> <p>FY 2014 Plans: -Conduct 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 launched from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS) -Initiate planning for Flight Test Ground-based Midcourse Defense-09 (FTG-09), a 3-stage Capability Enhancement II (CE-II) intercept engagement with associated object, using a GBI launched from Vandenberg Air Force Base, California against an IRBM target utilizing resources previously planned for FTG-08 per revised MDA Integrated Master Test Plan -Re-phased 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 from 4Q FY 2015 to 4Q FY2018 and continuing range infrastructure upgrade studies in preparation for planning for the Flight Test Ground-based Midcourse Defense-11 (FTG-11)</p>	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MT08 / <i>Ground Based Midcourse Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Collect Critical Engagement Conditions (CEC) / Empirical Measurement Events (EME) data that validates Models and Simulations (M&S)</p> <p>FY 2015 Plans:</p> <p>-Conduct Flight Test Ground-based Midcourse Defense-09 (FTG-09), a 3-stage Capability Enhancement II (CE-II) intercept engagement with associated object, using a GBI launched from Vandenberg Air Force Base, California against an IRBM target</p> <p>-Collect Critical Engagement Conditions (CEC) / Empirical Measurement Events (EME) data that validates Models and Simulations (M&S)</p> <p>-Initiate planning for Flight Test Ground-based Midcourse Defense-15 (FTG-15), a 3-stage C2/CBAU intercept with associated objects, using a GBI launched from Vandenberg Air Force Base, California against a target launched from Reagan Test Site (RTS))</p> <p>Decrease due to alignment of MDA test priorities to latest Integrated Master Test Plan</p>			
<p>Title: Ground Test Execution</p> <p align="right">Articles:</p> <p>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 (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>FY 2013 Accomplishments:</p> <p>-Continued support and execution of BMDS Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors</p> <p>FY 2014 Plans:</p> <p>-Continue to support execution of BMDS Ground Test-04 test campaign to assess BMDS capabilities with integration of additional BMDS sensors</p> <p>-Support planning of BMDS Ground Test-06 test campaign to assess BMDS capabilities with integration of additional BMDS assets (Ft. Drum, NY In-Flight Interceptor Communications 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>FY 2015 Plans:</p> <p>-Continue to support planning and support execution of BMDS Ground Test-06 test campaign to assess BMDS capabilities with integration of additional BMDS assets (Ft. Drum, NY In-Flight Interceptor Communications System (IFICS) Data Terminal (IDT),</p>	3.675 -	5.322 -	4.356 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
and the Space-Based Infrared System (SBIRS) Increment 2 Change), and demonstrate GMD Fire Control (GFC) 6B3 capabilities using a lab based Hardware-in-the-Loop (HWIL) Configuration during Ground Test Integrated -06 (GTI-06) -Support execution planning of BMDS Ground Test Distributed-06 (GTD-06) test campaign to assess BMDS capabilities and the mission functionality of the Ground-based Midcourse Defense (GMD) Fire Control (GFC) version 6B3 BMDS capabilities using fielded assets and long haul communications networks			
Decrease due to alignment of MDA test priorities to latest Integrated Master Test Plan.			
Accomplishments/Planned Programs Subtotals	69.419	98.873	79.877

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	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 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MT08 / <i>Ground Based Midcourse Test</i>

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MT08 / <i>Ground Based Midcourse Test</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal				-		-		-		-		-	-	-	-

Remarks

N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Resources - Ballistic Missile Defense System Hardware-In-The-Loop	C/CPIF	Boeing AL/AK/AZ/CA : CO/TX/VA	0.000	7.754		9.083		-		-		-	-	16.837	-
Subtotal				0.000	7.754	9.083		-		-		-	-	16.837	-

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Resources - Engineering & Analysis – Industry Support	C/CPAF	Boeing : AL	0.000	-		-		2.423		-		2.423	Continuing	Continuing	Continuing
Resources - Engineering & Analysis – OGA Support	MIPR	AMRDEC : AL	0.000	-		-		2.389		-		2.389	Continuing	Continuing	Continuing
Resources - Government Infrastructure Support, Labs, and Communications	MIPR	VAFB/AL : CO	0.000	5.052		7.510		6.383		-		6.383	Continuing	Continuing	Continuing
Resources - Prime Infrastructure	C/CPAF	Boeing AL/AK/AZ/CA : CO/TX/VA	0.000	5.305		5.882		7.279		-		7.279	Continuing	Continuing	Continuing

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

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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support, Labs, and Communications															
Flight Test Execution - Planning and Silo Refurbishment	C/CPAF	Boeing AL/AK/AZ/CA : CO/OR/TX/VA	0.000	30.112		32.120		28.350		-		28.350	Continuing	Continuing	Continuing
Flight Test Execution - Range, Resources, and Engineering	MIPR	VAFB/CO : PMRF	0.000	17.521		38.956		28.697		-		28.697	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-04 Campaign	C/CPAF	Boeing AL/AK/AZ/CA : CO/TX/VA	0.000	3.675		5.065		0.167		-		0.167	Continuing	Continuing	Continuing
Ground Test Execution - Ground Test-06 Campaign	C/CPAF	Boeing AL/AK/AZ/CA : CO/TX/VA	0.000	-		0.257		4.189		-		4.189	Continuing	Continuing	Continuing
Subtotal			0.000	61.665		89.790		79.877		-		79.877	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	69.419	98.873	79.877	-	79.877	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground-based Midcourse Defense Ground Test-04 test campaign	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧																
GM CTV-01 (GM Flight Test)		▲																										
FTG-07 (GM Intercept Flight Test)			▲																									
FTG-06b (GM Intercept Flight Test)								○																				
Ground-based Midcourse Defense Ground Test-06 test campaign									✧	✧	✧	✧	✧	✧	✧	✧												
FTG-09 (GM Intercept Flight Test)											○																	
FTG-15 (GM Intercept Flight Test)													○															
Ground-based Midcourse Defense Ground Test-07 test campaign													✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
FTG-13 (OTA Intercept Flight Test)																	○											
GM CTV-03 (GM Intercept Only Flight Test)																					○							
FTG-11 (GM Intercept Flight Test)																									○			
FTG-17 (GM Intercept Flight Test)																											○	

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

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground-based Midcourse Defense Ground Test-04 test campaign	1	2013	2	2015
GM CTV-01 (GM Flight Test)	2	2013	2	2013
Fast Aim (BMDS Ground Test)	4	2013	4	2013
FTG-07 (GM Intercept Flight Test)	4	2013	4	2013
Warfighter TP 04e (BMDS Ground Test)	1	2014	1	2014
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2015
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014
GTI-04e (Part 2 (BMDS Ground Test)	2	2014	3	2014
GDEx 06 Part 1 (BMDS Ground Test)	3	2014	3	2014
Ground-based Midcourse Defense Ground Test-06 test campaign	1	2015	3	2016
GDEx 06 Part 2 (BMDS Ground Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015
Warfighter TP 06 (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 3 (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
Ground-based Midcourse Defense Ground Test-07 test campaign	3	2016	2	2019
GTX-07a (BMDS Ground Test)	4	2016	4	2016
GDEx 07a (BMDS Ground Test)	4	2016	4	2016
GTI-07a (BMDS Ground Test)	1	2017	1	2017

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

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Events	Start		End	
	Quarter	Year	Quarter	Year
Warfighter TP 07a (BMDS Ground Test)	3	2017	3	2017
GDEx 07b Part 1 (BMDS Ground Test)	3	2017	3	2017
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
GM CTV-03 (GM Intercept Only Flight Test)	1	2018	1	2018
GTX-07b (BMDS Ground Test)	1	2018	1	2018
PA-07b (BMDS Ground Test)	3	2018	4	2018
GDEx 07b Part 2 (BMDS Ground Test)	3	2018	3	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
FTG-11 (GM Intercept Flight Test)	4	2018	4	2018
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
Warfighter TP 07b (BMDS Ground Test)	1	2019	2	2019
FTG-17 (GM Intercept Flight Test)	3	2019	3	2019
GDEx 08 Part 1 (BMDS Ground Test)	3	2019	3	2019
GTX-08 Part 2 (BMDS Ground Test)	4	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MX08 / <i>Ground Based Midcourse Development Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MX08: <i>Ground Based Midcourse Development Support</i>	-	129.644	-	-	-	-	-	-	-	-	-	129.644
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Starting in FY 2014 all funding moved from RDT&E to Operations and Maintenance (O&M) in accordance with the FY 2014 National Defense Appropriation Act (NDAA).

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 2013	FY 2014	FY 2015
Title: Sustainment	129.644	-	-
Articles:	-	-	-
<p>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.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Continued to provide GMD element operations and sustainment for Primary Mission Equipment (PME), support equipment, and operational facilities at all 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 -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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MX08 / <i>Ground Based Midcourse Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-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 2014 Plans: N/A FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	129.644	-	-

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

N/A

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 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MX08 / <i>Ground Based Midcourse Development Support</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Sustainment - Colorado Springs Operations	MIPR	Air Force COS : CO	0.000	3.442		-		-		-		-	-	3.442	-
Sustainment - Fort Greely, Alaska Operations	MIPR	Army Ft. Greely : AK	0.000	18.952		-		-		-		-	-	18.952	-
Sustainment - Government Furnished Property & Services	MIPR	Military Traffic Management Command : Various AL/AK/AZ/CA/CO/TX/VA	0.000	2.573		-		-		-		-	-	2.573	-
Sustainment - Maintenance of Primary System	SS/CPIF	Boeing AL/AK/AZ : CA/VA	0.000	93.932		-		-		-		-	-	93.932	-
Sustainment - Vandenberg Air Force Base Operations	MIPR	Air Force Vandenberg : CA	0.000	4.084		-		-		-		-	-	4.084	-
Sustainment - Warfighter Training, Exercises, and Wargames	MIPR	MDA : AL/CO	0.000	6.661		-		-		-		-	-	6.661	-
Subtotal			0.000	129.644		-		-		-		-	-	129.644	-

Remarks
Starting in FY 2014 all funding moved from RDT&E to Operations and Maintenance (O&M) in accordance with the FY 2014 National Defense Appropriation Act (NDAA).

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MX08 / <i>Ground Based Midcourse Development Support</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	129.644	-	-	-	-	-	129.644	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	47.558	45.335	50.606	58.099	-	58.099	66.449	58.944	46.654	44.871	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	45.335	50.606	58.099
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	45.335	50.606	58.099

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	10.558	-		1.509	Mar 2014	0.437	Mar 2015	-		0.437	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA : Multi: AK, AL, CA, CO, VA	34.000	32.780		47.182	Oct 2013	57.662	Nov 2014	-		57.662	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	0.420		-		-		-		-	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	10.875		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	American Institute of Aeronautics & AS : VA	0.000	-		1.915	Feb 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Sustainment Transportation	Reqn	Various : AK, AL, CA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPFF	Utah St Univ; JHU/ APL LLC : Multi: MD, UT	0.000	1.260		-		-		-		-	3.500	4.760	-
Program Wide Support - Facilities and Maintenance	MIPR	Various : Multi: AK, AL, CA, VA	3.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			47.558	45.335		50.606		58.099		-		58.099	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency								Date: March 2014					
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603882C / <i>Ballistic Missile Defense Midcourse Defense Segment</i>				Project (Number/Name) MD40 / <i>Program-Wide Support</i>					
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	47.558	45.335		50.606		58.099		-		58.099	-	-	-

Remarks

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	673.531	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
MD11: <i>BMDS Radars</i>	664.219	244.645	288.078	246.290	-	246.290	214.980	184.836	132.872	121.112	Continuing	Continuing
MD96: <i>Long Rand Disc Radar (LRDR)</i>	-	-	-	50.500	-	50.500	136.300	152.000	145.400	132.000	Continuing	Continuing
MC11: <i>Cyber Operations</i>	-	-	1.180	1.212	-	1.212	1.247	1.282	1.319	1.352	Continuing	Continuing
MT11: <i>BMDS Radars Test</i>	-	43.953	62.011	71.309	-	71.309	81.782	82.287	96.435	87.372	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	9.312	18.298	15.321	23.582	-	23.582	27.721	28.358	27.246	26.289	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

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

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

A. Mission Description and Budget Item Justification

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

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

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	
<p>of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.</p> <p>The BMD Sensors Program contributes to regional missile defense through the following activities:</p> <p>Development, delivery and deployment or redeployment of remote, forward based Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) radars to include radars for tests or operations. Radars provide early warning, track, and discrimination data through all phases of ballistic missile flight. Through the BMDS C2BMC and coalition data links, the AN/TPY-2 provides fire control data to enable remote Standard Missile (SM)-3 engagements by Aegis BMD, to allow earlier engagement by the Arrow Weapon System, and to cue deployed THAAD and U.S. and partner PATRIOT batteries.</p> <p>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.</p> <p>AN/TPY-2 radars can be configured to operate either as a THAAD Fire Unit Radar (terminal mode) or Forward-Based Radar. These radars are transportable, adding flexibility to respond to geographical changes in threats. The AN/TPY-2 used in a forward-based role provides detection and tracking during the boost phase. This significantly reduces the uncertainty in target discrimination and reaction time, increasing the probability of a successful BMDS engagement. In forward-based mode, the AN/TPY-2 also provides acquisition and track data via the BMDS C2BMC and Link 16 to the Aegis missile defense system for cueing. The AN/TPY-2 used in terminal mode is an integral component of the THAAD Battery. The THAAD battery radar is capable of tracking multiple threats and multiple interceptors during engagements in the terminal phase. It provides surveillance, acquisition, track, discrimination, interceptor communications, and hit assessment data collection for the fire control. The current and planned utilization of the AN/TPY-2 radars supports GMD, THAAD, and the Aegis Weapon System via C2BMC.</p> <p>The Ballistic Missile Defense System (BMDS) network of sensors also includes the COBRA DANE Radar at Eareckson Air Force Station in Alaska, and the Upgraded Early Warning Radars (UEWR) at Beale Air Force Base, CA, Fylingdales Royal Air Force, United Kingdom, and at Thule Air Force Base in Greenland.</p> <p>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.</p> <p>The Clear EWR, located at Clear Air Force Station, AK, and the Cape Cod EWR, Located at Cape Cod Air Force Station, MA are also being upgraded to include missile defense functionality. Upgrade activities began in FY 2012 and are expected to be completed in FY 2017. The addition of the Clear UEWR and Cape Cod UEWRs the BMDS sensor architecture will improve BMDS sensor coverage and provide new engagement options against long-range missile threats.</p> <p>The BMD Vision Study, conducted by MDA with USSTRATCOM, identified the need to enhance the discrimination capabilities of our sensors and weapon systems. The BMD Sensors Program meets this need through the following activities:</p>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>
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One of the critical areas identified in the study to be addressed by the future BMDS was the need to provide a more robust discrimination capability to support the defense of the Homeland. As part of the BMDS Integrated Discrimination strategy, the addition of a Long Range Discrimination Radar (LRDR) to the BMDS would address this critical need through providing persistent 24/7 precision tracking and discrimination capability. The development, integration and fielding of the LRDR will provide an improved persistent midcourse Ballistic Missile Defense System (BMDS) discrimination capability in the Pacific architecture, optimize the Ground-Based Midcourse Defense (GMD) interceptor inventory, and address evolving threats. In addition the radar will provide larger hit assessment coverage potentially supporting improved warfighting capability to manage the GBI inventory and improving the capacity of the BMDS.

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

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

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

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

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

Change Summary Explanation

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

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>
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The FY 2015 increase reflects the addition of the MD96 Budget Project for the Long Range Discrimination Radar (LRDR) and additional funding for enhanced discrimination capability.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDS Radars</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD11: <i>BMDS Radars</i>	664.219	244.645	288.078	246.290	-	246.290	214.980	184.836	132.872	121.112	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

Activities in this project include:

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD11 / <i>BMDS Radars</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Continued Debris Mitigation Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3) and provide enhanced Warfighter capability in complex tactical environments</p> <p>-Conducted Threat Compliance Development activities required to meet BMDS System Spec Threat Requirements (D2 and D3 Threats)</p> <p>-Supported software efforts for Phase Adaptive Approach (PAA) Phase 3 and threat discrimination database improvements for Phase 2.</p> <p>-Operational Flight Test successfully demonstrated Phase 1b Debris Mitigation Performance.</p> <p>FY 2014 Plans: -FY 2014 Plans transferred to Basic Development Program accomplishments</p> <p>FY 2015 Plans: -FY 2015 Plans transferred to Basic Development Program accomplishments</p>				
<p>Title: Basic Development Program</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: -See X-Band Basic Program accomplishments</p> <p>FY 2014 Plans: -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> <p>FY 2015 Plans: - Complete ground test and flight test for Phase Adaptive Approach (PAA) Phase II and conduct Material Release Analysis for software delivery</p>		Articles:	-	36.909
		-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Complete Material Release Closure Plan for Forward Base Mode (FBM) and continue to conduct Material Release Closure Plan for Terminal Mode (TM) for Army Navy/Transportable Radar Surveillance and Control (AN/TPY-2) including Reliability, Availability, and Maintainability Get Well Plan to promote reliability growth in the suite of AN/TPY-2 radars via incorporation of retrofit change notice</p> <p>- Conduct Phase Adaptive Approach (PAA) Phase III: Objective Debris Mitigation Development and THAAD Threat Development required to provide enhanced capability to the Warfighter in a tactical environment</p> <p>-Continue performing Upgrade Early Warning Radar (UEWR) development such as the reinforcement of the surveillance fence that results in the increased probability of acquisition and the reduction/correction of the radar angle bias that results in increased accuracy of threat tracking</p> <p>-Continue to conduct Information Assurance (IA) certification and accreditation of all Sensors systems</p> <p>-Continue to support Bi-Annual IA testing for vulnerabilities and Third Party IA assessment of the systems</p>			
<p>Title: BMDS Level Testing</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: -Plans for FY 2013 are described in Budget Project MT11, 0603884C.</p> <p>FY 2014 Plans: N/A</p> <p>FY 2015 Plans: N/A</p>	-	-	-
<p>Title: BMDS Radars Modeling & Simulation (M&S)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: -Supported Performance Assessment (PA-04) spiral integration, using Open Systems Architecture Sensor Models (OSM) and other models/tools, as appropriate -Continued maintenance of digital and HWIL representations of the tactical versions of AN/TPY2 (CX1.3), SBX 3.1, UEWR 8.0.3, and CDU 2.6.7 and Critical Engagement Condition and Empirical Measurement Event implementation -Funded and supported all UEWR software updates tests in the HWIL simulations in Huntsville</p>	43.111 -	24.927 -	31.765 -

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

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

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

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<i>Articles:</i>		-	-	-
Description: N/A				
FY 2013 Accomplishments: -Plans for FY 2013 are described in Budget Project MT11, 0603884C BMDS Radar Test				
FY 2014 Plans: N/A				
FY 2015 Plans: N/A				
Title: Upgrade Clear Early Warning Radar		32.558	51.194	38.576
<i>Articles:</i>		-	-	-
Description: N/A				
FY 2013 Accomplishments: -Completed refinement of design, culminating with Data Processor/Signal Processor critical design review (CDR) for hardware and software -Began purchasing and manufacturing of Long Lead UEWR equipment, such as commercial-off-the-shelf (COTS) items and the UEWR receiver/exciter (REX) -Began creation, integration, and unit testing of software and adapting it to UEWR infrastructure -Continued facility design and work -Continued work related to fiber and SATCOM to support BMDS communications and architecture				
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 -Continue adaptation of hardware and software to UEWR infrastructure -Continue to support Ballistic Missile Defense Systems communications and architecture work -Continue facility design and work -Continue Upgraded Early Warning Radar Huntsville System Test Lab				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Decrease due to a reduction in the design and development activities and hardware purchases to begin integration and deployment activities</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -Continue upgrade of Clear and Cape Cod Early Warning Radars to include but not limited to: -Purchasing and manufacturing of Upgraded Early Warning Radar (UEWR) Receiver/Exciter -Purchase of non-original manufacturer equipment -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 				
<p>Title: AN/TPY-2 Radar Deployment / Site Activation</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Purchased Long Lead Material in support of PACOM #2 Deployment CY14 -Conducted on-site surveys in support of EMI, site designs -Participated in PACOM #2 Mission Site Design Charrette <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Deploy an AN/TPY-2 Radar with personnel 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 <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -No planned deployments in FY 2015 		<p>Articles:</p> <p>14.113</p> <p>-</p>	<p>28.610</p> <p>-</p>	<p>-</p> <p>-</p>
<p>Title: Project Oak</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p>		<p>Articles:</p> <p>0.027</p> <p>-</p>	<p>4.417</p> <p>-</p>	<p>-</p> <p>-</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Project Oak details are at a higher classification. This project is reported in accordance with Title 10, United States Code, Section 19 (a)(1) in the Special Access Program Annual Report to Congress			
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			
FY 2015 Plans: -FY 2015 Plans transferred to Capability Development Program			
Accomplishments/Planned Programs Subtotals	244.645	288.078	246.290

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

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

Remarks

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D. Acquisition Strategy

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

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

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

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

E. Performance Metrics

N/A

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

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
X-Band Basic Program - Army Hybrid Program Office	MIPR	SMDC : AL	1.930	0.957		-		-		-		-	-	2.887	-
X-Band Basic Program - Intercept Debris Mitigation	SS/CPAF	Raytheon : MA	0.000	9.500		-		-		-		-	-	9.500	-
X-Band Basic Program - Material Release Get Well Plan	SS/CPFF	Raytheon : MA	0.000	0.610		-		-		-		-	-	0.610	3.100
X-Band Basic Program - X-Band Software Enhancements/ Development	SS/CPFF	Raytheon : AL	158.593	36.516		-		-		-		-	-	195.109	65.363
Basic Development Program - Ground Based Radar Prototype (GBR-P) Caretaker	MIPR	SMDC : AL	0.000	-		1.015	Nov 2013	2.068	Nov 2014	-		2.068	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance AN/TPY-2 (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon : MA	0.000	-		5.288	Nov 2013	5.688	Nov 2014	-		5.688	Continuing	Continuing	Continuing
Basic Development Program - Information Assurance SBX (C-CLS/GMD CCC/X00047)	SS/CPFF	Raytheon : MA	0.000	-		0.270	Nov 2013	0.232	Nov 2014	-		0.232	Continuing	Continuing	Continuing
Basic Development Program - Material Release Get Well Plan	SS/CPFF	Raytheon : MA	0.000	-		5.430	Nov 2013	7.245	Nov 2014	-		7.245	Continuing	Continuing	Continuing
Basic Development Program - Sys Integration & Tech Assessments	SS/CPFF	Raytheon : MA/AL	0.000	-		7.640	Nov 2013	6.984	Nov 2014	-		6.984	Continuing	Continuing	Continuing
Basic Development Program - X-Band Software Enhancements/ Development	SS/CPFF	Raytheon : AL	0.000	-		17.266	Nov 2013	24.163	Nov 2014	-		24.163	Continuing	Continuing	Continuing

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

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

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

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

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

Remarks

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

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

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

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

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

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

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

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

Remarks
N/A

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

Remarks
N/A

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

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

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

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

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

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

Schedule Details

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD96 / <i>Long Rand Disc Radar (LRDR)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
<i>MD96: Long Rand Disc Radar (LRDR)</i>	-	-	-	50.500	-	50.500	136.300	152.000	145.400	132.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

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

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD96 / <i>Long Rand Disc Radar (LRDR)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Complete siting and environmental analyses, and final selection of location -Initiate civil engineering effort for installation planning -Complete development of Request for Proposal, release Request for Proposal, review proposals, evaluate candidates, and complete source selection			
Accomplishments/Planned Programs Subtotals	-	-	50.500

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603884C: <i>SENSORS MILCON</i>	-	32.204	-	-	-	67.200	85.200	84.000	57.900	-	326.504
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 31299903: <i>MILCON PLANNING and DESIGN</i>	4.191	10.891	38.704	-	38.704	8.042	8.385	8.572	8.836	-	87.621

Remarks

D. Acquisition Strategy

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

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD96 / <i>Long Rand Disc Radar (LRDR)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Long Range Discrimination Radar (LRDR) - Site Activation & Studies	TBD	MDA : AL	0.000	-		-		13.010	Nov 2014	-		13.010	Continuing	Continuing	Continuing
Long Range Discrimination Radar (LRDR) - XBR - Prime Contractor	TBD	TBD : TBD	0.000	-		-		37.490	Sep 2015	-		37.490	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		50.500		-		50.500	-	-	-

Remarks
N/A

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

Remarks
N/A

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

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

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

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

Schedule Details

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MC11 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC11: <i>Cyber Operations</i>	-	-	1.180	1.212	-	1.212	1.247	1.282	1.319	1.352	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

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

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

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

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MC11 / <i>Cyber Operations</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -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 <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Continue to fund Sensors Directorate Information Assurance Manager (IAM) civilian salaries - Continue cyber security / information assurance engineering and architecture planning for Sensors information technology systems - Continue to plan and test the IA controls for Ballistic Missile Defense System (BMDS) Sensors systems - Continue to develop Sensors DIACAP certification and accreditation packages - Continue to conduct Controls Validation Testing (CVT) of Sensors mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies - Continue to conduct annual information assurance reviews on the Sensors enclaves to assess compliance in implementing and maintaining IA controls 			
Accomplishments/Planned Programs Subtotals	-	1.180	1.212

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

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

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

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

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

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

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

Remarks
N/A

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

Remarks
N/A

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

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

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

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

Schedule Details

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT11: <i>BMDS Radars Test</i>	-	43.953	62.011	71.309	-	71.309	81.782	82.287	96.435	87.372	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

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

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

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

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

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

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

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

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Support evolving Single Stimulation Framework (SSF) (software upgrades) integration into the BMDS HWIL Ground Test Infrastructure -Decrease due to element-level ground testing being realigned to BMDS Radars Modeling & Simulation in the MD11 Budget Project FY 2015 Plans: -Continue to configure and maintain Sensors HWILs for use in BMDS Ground Tests and element-level ground tests -Continue to configure and maintain Sensors HWILs for use in BMDS Flight Tests System Pre-Mission Testing -Continue to support evolving Single Stimulation Framework (SSF) (software upgrades) integration into the BMDS HWIL Ground Test Infrastructure			
Accomplishments/Planned Programs Subtotals	43.953	62.011	71.309

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603179C: <i>Advanced C4ISR</i>	-	36.500	15.329	-	15.329	10.389	3.942	-	-	-	66.160
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 13999903: <i>Planning and Design, Defense Wide</i>	4.191	-	9.704	-	9.704	8.042	8.385	8.572	8.836	Continuing	Continuing
• D1400634: <i>Upgrade Early Warning Radar (UEWR), Clear AFS, AK</i>	-	17.204	-	-	-	-	-	-	-	-	17.204

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

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

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

D. Acquisition Strategy

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

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ballistic Missile Defense System (BMDS) Level Testing - AN/TPY-2 & SBX FT & GT	SS/CPFF	Raytheon : MA	0.000	27.643		31.412	Nov 2013	39.648	Nov 2014	-		39.648	Continuing	Continuing	Continuing
Ballistic Missile Defense System (BMDS) Level Testing - Site Security, Test Range Support, and Site Activation Operations	MIPR	Various : CA, HI, CO	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Ballistic Missile Defense System (BMDS) Level Testing - Thule FT & GT	SS/CPAF	Raytheon, Boeing : MA/AL	0.000	-		-		-		-		-	4.133	4.133	12.881
Ballistic Missile Defense System (BMDS) Level	C/FPIF	deciBel : MA/AL	0.000	1.577		9.015	Nov 2013	12.267	Nov 2014	-		12.267	Continuing	Continuing	Continuing

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

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

Remarks
N/A

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

Remarks
N/A

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

Remarks

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MT11 / <i>BMDS Radars Test</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

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

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

Schedule Details

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

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

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603884C / <i>Ballistic Missile Defense Sensors</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	9.312	18.298	15.321	23.582	-	23.582	27.721	28.358	27.246	26.289	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

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

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

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

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

Remarks
N/A

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

Remarks
N/A

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

Appropriation/Budget Activity 0400: Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	660.382	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
MD24: System Engineering & Integration	276.635	97.513	100.895	138.825	-	138.825	141.229	113.147	243.670	336.506	Continuing	Continuing
MT23: Enabling - Test	-	29.288	42.814	22.661	-	22.661	18.897	19.637	19.216	17.299	Continuing	Continuing
MD28: Intelligence & Security	33.687	28.627	32.134	40.231	-	40.231	41.283	42.075	43.569	44.690	Continuing	Continuing
MD30: BMD Information Management Systems	-	97.258	92.411	97.097	-	97.097	95.087	104.976	91.876	93.524	Continuing	Continuing
MC30: Cyber Operations	-	-	14.431	15.452	-	15.452	15.208	17.762	16.322	16.941	Continuing	Continuing
MD31: Modeling & Simulation	204.991	40.832	41.188	41.957	-	41.957	44.489	46.323	50.274	51.262	Continuing	Continuing
MC31: M&S Cyber Operations	-	-	-	0.223	-	0.223	0.229	0.234	0.240	0.246	Continuing	Continuing
MD32: Quality, Safety, and Mission Assurance	93.537	28.505	30.115	30.637	-	30.637	31.621	31.541	31.674	32.343	Continuing	Continuing
MD40: Program-Wide Support	51.532	14.740	18.321	23.780	-	23.780	24.221	25.118	34.911	44.312	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	
<p>of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding.</p> <p>The MDA Enabling Programs are:</p> <ul style="list-style-type: none"> -(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 capability deliveries. 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 and MDA. -(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 Information Technology (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 Information Assurance (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 (M&S) - As missile defense technologies continually advance and the threat changes, M&S develops system-level models, simulations, and environments, then evaluates performance of the Elements, Components, and overall BMD System in support of verification, validation and accreditation activities. -(MC31) M&S Cyber Operations provides the network / system certification and accreditation of M&S related information technology networks and systems necessary to comply with the Federal Information Security Management Act. -(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). 		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	362.711	377.605	406.983	-	406.983
Current President's Budget	336.763	372.309	410.863	-	410.863
Total Adjustments	-25.948	-5.296	3.880	-	3.880
• Congressional General Reductions	-0.479	-0.296			
• Congressional Directed Reductions	-	-5.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	18.209	-			
• SBIR/STTR Transfer	-14.653	-			
• Other Adjustment	-29.025	-	3.880	-	3.880

Change Summary Explanation

The FY 2015 adjustments reflect realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD24: System Engineering & Integration	276.635	97.513	100.895	138.825	-	138.825	141.229	113.147	243.670	336.506	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

The FY 2015 increase represents increased priority on Discrimination requirements, additional requirements to effect new mission of Technical Integrator for the Joint-Service Integrated Air and Missile Defense (IAMD) program, and program re-alignments within the Enabling PE.

The Threat Systems Engineering activity has transferred in FY 2015 to project MD28, Intelligence & Security.

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. SE&I 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 capability 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. The system engineering projects that accomplish these functions include: Future Concepts and Planning; Requirements and Design; and System Level Verification and Assessment. Additional engineering efforts cross multiple stages of the system engineering process: Countermeasures Mitigation/Counter-Countermeasures Mitigation (CM/CCM), BMDS Assessment, Engineering Analysis and Quick Response Team, anti-tamper, reliability, and Engineering Manufacturing Readiness Level development.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Systems Engineering and Integration (SE&I) will perform BMDS performance analysis and requirements engineering activities to specify the BMDS requirements and interfaces to achieve the DIHD capability. SE&I will develop a Specification Change Notice (SCN) for DIHD Near-Term which will allocate discrimination performance requirements across BMDS elements. For DIHD Mid-Term, SE&I will establish performance goals for the technology development phase, and develop functional, performance, and interface requirements to address the DIHD Mid-Term threat set. SE&I will establish ground test, and flight test target requirements for Near and Mid-Term phases, and generate threat data to support analysis and testing activities.

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

- 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 enhance homeland defense
- Develop discrimination improvements for the Homeland Defense mission.
- As technical authority for Integrated Air and Missile Defense (IAMD), provide a consistent, disciplined systems engineering process using a multi-Service systems engineering team to support integration of Joint IAMD systems.
- Provide technical direction to Element and Component developers and provide System-level forums to track, assess, and improve hardware and software reliability
- Identify BMDS capabilities and limitations
- Verify and assess Ballistic Missile Defense System (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
- 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 2013	FY 2014	FY 2015
<p>Title: Future Concepts and Planning</p> <p style="text-align: right;">Articles:</p> <p>Description: This activity funds the Ballistic Missile Defense System (BMDS) architecture and future concept development. The BMDS Chief Architect develops and improves the integrated BMDS architecture by analyzing and proposing architecture alternatives and new technologies. The architecture and concepts team incorporates these alternatives and technologies into the BMDS future capabilities Systems Engineering effort to include Phased Adaptive Approach(PAA)Phase 3 by establishing and documenting initial system-level requirements.</p>	14.781	9.642	12.451
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p><i>FY 2013 Accomplishments:</i></p> <ul style="list-style-type: none"> - Completed concept capability documentation updates based on the results of the Phased Adaptive Approach (PAA) architectural trade studies and technology development experiments. - Refined the Capability Planning specifications for future Command and Control Battle Management and Communications (C2BMC). - Supported technology development reviews for Standard Missile-3 (SM-3) Block IIB in support of follow on development efforts. - 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. - Supported Defense Threat Reduction Agency (DTRA)/Missile Defense Agency efforts to provide consequence model predictive capabilities. - Maintained 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"> -- Updated independent adversary (Red Team) perspective on Phased Adaptive Approach (PAA) -- Completed independent adversary (Red Team) evaluation of three integrated countermeasure suites against PAA -- Completed independent adversary (Red Team) detailed evaluation of attack strategy against two selected PAA components <p><i>FY 2014 Plans:</i></p> <ul style="list-style-type: none"> - Support technical evaluation activities for future programs (improvements to Command and Control Battle Management and Communications (C2BMC), Aegis 5.1). - Conduct BMDS Performance Analysis and Trade Studies to support technical reviews (C2BMC, Aegis 5.1). - Conduct BMDS Program of Record gap assessment and concept alternative assessment in support of budget development process. - Initiate Development of Capability Planning Specifications to document functional and performance requirements for Future BMDS Programs. - Analyze architecture alternatives and new technologies, including advanced weapon and sensor concepts (such as airborne infrared (IR) technologies, Directed Energy (laser) concepts, and rail gun applications). - 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. - Participate in CAPE-directed Analyses of Alternatives (AoAs) for Homeland Defense and Sensors. - 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. 			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<p>- Assess emerging threats and develop countermeasure mitigation strategies and roadmaps.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Identify architecture alternatives that improve the BMD System's performance and are complementary to and interoperable with NATO systems and theaters around the world. - Analyze architecture alternatives and new technologies, including new radar concepts. - Conduct BMDS Program of Record gap assessment and concept alternatives assessments in support of the budget development process. - Update concept capability documentation based on the results of the Phased Adaptive Approach (PAA) Phase 3 and future architectural trade studies and technology development experiments. - Develop and document integrated requirements for improvements to, or augmentations of, current system capabilities in the form of a Phased Implementation Plan. - Support Warfighter development of the Prioritized Capabilities List (PCL). - Develop the Achievable Capabilities List (ACL) to respond to the PCL. - Develop and refine Capability Planning Specifications for future BMDS Elements/Components. - Support technology development reviews for future/follow-on BMDS Element development efforts. <p>FY 2015 increase due to additional efforts to develop and document efforts beyond PAA Phase 3.</p>			
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Title: Requirements and Design	31.083	24.486	27.546
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Articles:	-	-	-
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Description: The Requirements and Design effort develops the Ballistic Missile Defense (BMD) System level requirements and specifications for the Phased Adaptive Approach (PAA) Phases and drives the integration of the BMDS; adjudicates Element level specifications that underpin the BMDS, resulting in optimized capabilities for the Warfighter.

FY 2013 Accomplishments:

Conducted Engineering Reviews for MDA Engineering, which include new Phased Adaptive Approach capabilities:

- 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 the new Phased Adaptive Approach capabilities are 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD24 / <i>System Engineering & Integration</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Conducted engineering analyses and perform trade studies for system design and development products, including the BMD System Specification and BMDS Interface Control Documents.</p> <p>- Provided updated requirements traceability and certification guidance and conducted detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common System/Element requirements interpretation.</p> <p>FY 2014 Plans:</p> <p>- Conduct BMDS Engineering Reviews to address new capabilities:</p> <p>--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.</p> <p>-- 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).</p> <p>--Perform technical evaluations of emerging adversary characteristics.</p> <p>- 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:</p> <p>--BMD System Description Document (BMD SDD) and BMD System Specification (BMD SS) (e.g. incorporation of Robust IRBM Defense capabilities).</p> <p>--BMDS Interface Control Documents (ICDs).</p> <p>--Develop specification change notices for Discrimination Improvements for Homeland Defense (DIHD) Near term functional and performance requirements.</p> <p>- Conduct engineering analyses and perform trade studies for system design and development products.</p> <p>- 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.</p> <p>FY 2015 Plans:</p> <p>- Develop functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs.</p> <p>- Develop updates to the BMD System Description Document, BMD System Specification, and BMD System Interface Control Documents to document integrated system build content, such as discrimination, approved for design, development and integration.</p> <p>- Conduct System/Subsystem Requirements Reviews to ensure correct technical execution and understanding to realize the Phased Adaptive Approach (PAA) and increase the flexibility and capability of the BMDS.</p> <p>- Conduct engineering analyses and perform trade studies for system design and development products.</p> <p>- Complete the engineering work to finalize System Change Notices (SCNs) for PAA Phase 3 requirements changes, to include mitigation strategies to address BMDS Discrepancy Reports.</p> <p>- Develop requirements language for Discrimination Improvements for Homeland Defense (DIHD) Mid Term capabilities to executing elements, in collaboration with BMDS Program Elements.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Develop requirements language for Common Kill Vehicle (CKV) Requests for Proposals (RFP). - Conduct CKV System Requirements Review (SRR). - Provide updated requirements traceability and certification guidance and conduct detailed System/Element requirements reconciliation to resolve technical disconnects and ensure common requirements interpretation. <p>FY 2015 increases due to near- and mid-term capability refinements, such as discrimination and CKV analysis.</p>			
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<p>Title: Systems Engineering, Engineering Analysis and Quick Response Team</p> <p align="right">Articles:</p>	6.923 -	6.401 -	8.851 -
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Description: The Systems Engineering, Engineering Analysis, and Quick Response Team task provides rapid response, high quality systems engineering analysis products and supporting technical data to address external and internal Agency inquiries and decisions; produces complex weapon system performance data; develops responses to Warfighter requests for information and analysis (RFI/RFA); supports Real World Events; and maintains the Effectiveness Metrics Standard to ensure consistent and accurate analyses.

FY 2013 Accomplishments:

- Conducted overall Systems Engineering and Integration program operations and management.
- Conducted system level performance analysis to support BMDS Architecture and Systems Engineering.
- Developed expected performance for each PAA 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 improve capability.
- 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 to examine critical areas as designated by the Director for Engineering.
- Provided analysis and assessment support to the Combatant Commands to respond to Warfighter requests for analyses and requests for information.

FY 2014 Plans:

- Conduct system level performance analysis to support ongoing BMDS Architecture and Systems Engineering efforts:
 - Conduct performance analysis to support the development Homeland Defense system architecture options.
 - Develop expected performance for PAA phase 3 and beyond.
 - Conduct technical analyses and provide performance predictions for future BMDS components, such additional radars, interceptor sites, and Common Kill Vehicle (CKV).
 - Provide technical assessments in critical areas, such as technical performance measures.
- Conduct analyses to support Aegis BMD 5.1 and Standard Missile-3 Block IIA (SM-3 Blk IIA) engineering reviews.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Support VV&A of primary BMDS performance model. - 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 Element 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 2015 Plans:</p> <ul style="list-style-type: none"> - Continue performance analysis to support the development Homeland Defense system architecture options. - Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts: <ul style="list-style-type: none"> -- Analyze and predict the performance of future BMDS capabilities, such as new sensor concepts. -- Provide technical assessments in critical areas, such as technical performance measures. - Respond to Warfighter, Combatant Command (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 Element 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 2015 increase due to higher level of support required for COCOM, Warfighter, and Other analysis requests.</p>			
<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 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Maintained and updated the agency-wide common and consistent BMDS threat to provide data for future BMDS design, verification, and assessment. - Updated adversary missile capabilities and characterizations consistent with projected threat environment for the BMDS PAA. <p>FY 2014 Plans: Develop and maintain the BMDS threat set to support BMDS design, verification, and assessment efforts.</p>	8.788 -	8.125 -	- -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> -- Update, verify, and validate threat models to include new threat representations, based on current intelligence reports. -- Provide high fidelity digital BMD threat descriptions that support Element defensive capability developments. -- 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. -- Guide targets requirements development, planning, and certification for BMDS flight tests. -- Validate threat representation of targets and support development of target requirements. -- Publish FY 2014 Adversary Data Package. <p>FY 2015 Plans: This activity moves to project MD28, Intelligence & Security, in FY 2015.</p>			
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Title: Anti-Tamper and Engineering Manufacturing Readiness Levels Development	5.011	4.549	5.683
Articles:	-	-	-

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.

FY 2013 Accomplishments:
Anti-Tamper:
- Developed Anti-Tamper technologies to enable response and sensing capabilities for the BMDS.

Engineering and Manufacturing Readiness Levels (EMRLs):
- Applied EMRLs 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.
- Used EMRLs to assess the maturity of MDA development programs, and to report readiness for transition to production, in a standard format across all MDA Elements.

FY 2014 Plans:
- 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.

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Develop anti-tamper approaches to enable international fielding, support coalition warfare, and extend the effective operational life of the BMDS. - Assist BMDS Programs in developing and implementing 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: System-Level Verification and Assessment (was Independent Technical Assessment)</p> <p align="right">Articles:</p> <p>Description: The activity uses data obtained during flight tests, ground tests, performance assessments and other analyses to verify and provide technical assessments of Ballistic Missile Defense System (BMDS) capabilities. Provides subject matter expertise to support high priority BMDS studies and reviews.</p> <p>FY 2013 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. - 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 2014 Plans:</p> <ul style="list-style-type: none"> - Perform independent analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations. - 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. 		11.313	10.459	14.126
		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<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>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Conduct non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Defense of the Homeland, Defense of Israel and Theater/Regional BMD) - Conduct extensive analysis of data collected in BMD test events (digital, hardware-in-the-loop, and flight test), instrumental to understanding BMD operations and performance - Identify mitigation approaches for system performance issues uncovered during the course of analysis and assessment - Produce independent assessments of each Capability Delivery for THAAD, PATRIOT, Aegis BMD, AN/TPY-2 and C2BMC in support of fielding readiness for PAA Phases - Perform independent analyses and assessments for MDA Leadership, including investment prioritization, system architecture studies, design reviews, and failure investigations. - 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 activities and digital Modeling and Simulation events. <p>FY 2015 increase due to re-categorization of assessment efforts previously reported in budget project MT23.</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 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Identified and mitigated BMDS element (C2BMC, Interceptor, Space, and Sensor) technical risks, and served as independent technical advisors to BMDS program offices. - Provided independent review of BMDS Knowledge Point closure, and participated in Failure Review Boards. - Provided program managers with 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 C2BMC, Interceptor, Space, and Sensor reliability. <p>FY 2014 Plans:</p>		13.686	12.653	13.269
		-	-	-

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Appropriation/Budget Activity 0400 / 4		R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015	
<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: -- 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> <p>FY 2015 Plans: -Provide reach-back capability (Federally Funded Research and Development Centers and University Affiliated Research Centers) for Element program managers: -- 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 Mission Assurance assessments, 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		5.928	5.480	6.701	
		Articles:	-	-	-
<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 2013 Accomplishments: - Reviewed, approved and maintained configuration for program risks across the BMDS.</p> <p>FY 2014 Plans: - 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> <p>FY 2015 Plans:</p>					

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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- | | | | |
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| <ul style="list-style-type: none"> - Convene and chair Risk Management Working Group. - Execute the risk management and mission readiness working group process. - Establish and maintain a risk database using the Failure Reporting and Corrective Action System (FRACAS). - Review and approve program element risks, on quarterly basis. | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|

Title: Manufacturing and Producibility	-	2.500	4.126
Articles:	-	-	-

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.

FY 2013 Accomplishments:
N/A

- FY 2014 Plans:**
- 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.
 - Support the development of a cost-effective and producible Common Kill Vehicle (CKV).

- FY 2015 Plans:**
- Assess the effectiveness of reliability programs for each MDA Product (Radar, Launcher, Missile/Interceptor, etc.) to achieve/sustain required reliability.
 - Identify failure trends/modes
 - Evaluate impact on the Probability of Mission Success
 - Evaluate return on investment (ROI) from implementing corrective actions.
 - Review the Stockpile Reliability Programs for all MDA Missiles/Interceptors for effectiveness, and identify opportunities for efficiencies to be gained by sharing test resources or test results/analysis for common/comparable components.
 - Implement supply chain risk identification and mitigation tracking system across the BMDS.
 - Conduct deep dive into critical component supply base.
 - Utilize tracking system to mitigate manufacturing supply issues with critical components.
 - Support the development of a cost-effective and producible Common Kill Vehicle (CKV).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY 2015 increase due to increased support for supply chain risk management and CKV efforts.			
<p>Title: Discrimination</p> <p align="right">Articles:</p> <p>Description: The Discrimination Improvements for Homeland Defense(DIHD)effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Systems Engineering and Integration (SE&I) will perform BMDS performance analysis and requirements engineering activities to specify the BMDS requirements and interfaces to achieve the DIHD capability. SE&I will develop a Specification Change Notice (SCN) for DIHD Near-Term which will allocate discrimination performance requirements across BMDS elements. For DIHD Mid-Term, SE&I will establish performance goals for the technology development phase, and develop functional, performance, and interface requirements to address the DIHD Mid-Term threat set. SE&I will establish ground test, and flight test target requirements for Near and Mid-Term phases, and generate threat data to support analysis and testing activities.</p> <p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Develop software upgrades to specify data aggregation capability from multiple sensors to improve identification of lethal targets to fire control. - Develop TPY-2 sensor and interface requirements to pass sensor generated features to C2BMC needed for improving identification of lethal targets. - Complete DIHD Near-term threat requirements and development of threat data. - Complete DIHD Near-term functional and interface requirements development and allocation to BMDS elements. - Publish technical content definition and scoping of the DIHD Near- and Mid-term capability to executing elements. - Assess planned discrimination technologies candidates to support the DIHD Mid-term capability. - Complete development of ground test campaign requirements for DIHD Near-term improvements. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Complete integration phase for DIHD Near-term ground testing via GTI-06. - Conduct planning, assessment, and specification work to keep pace with emerging threat. - Continue development of software upgrades to C2BMC to aggregate information from multiple sensors to improve identification of lethal targets to fire control. - Continue development of TPY-2 sensor and interface upgrades required to pass sensor generated features to C2BMC needed for improving identification of lethal targets. - Conduct data collection and analysis for final assessment of discrimination technologies candidates planned for DIHD Mid-term. - Down select development ready technologies for the DIHD Mid-term phase content. 	-	16.600	31.972
	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Complete BMDS functional and performance requirements for DIHD Mid-term capability.			
FY 2015 increase due to ramp-up of high priority effort to improve BMD System Discrimination for Homeland Defense.			
Title: Integrated Air and Missile Defense (IAMD)	-	-	14.100
Articles:	-	-	-
Description: The Integrated Air and Missile Defense (IAMD) effort provides a consistent, disciplined systems engineering process using a multi-Service systems engineering team to support integration of Joint IAMD systems to provide improved performance and capabilities to the Combatant Commands (COCOMs) and Warfighter. This effort includes systems engineering analysis; development of technical integration and interface control requirements and documents; and definition of candidate Joint IAMD build capability increments and configuration control across the joint systems. This effort was funded by the Air Force in FY 2013-2014, and transitions to MDA beginning in FY 2015.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: - Lead IAMD engineering and integration efforts, including interface definition and control and technical requirements allocation across the Joint IAMD Service systems. - Using Modeling and Simulations, analyze technical options under operationally stressing threat conditions to improve air picture of sufficient quality to support coordinated decision making across a joint warfighting environment. - Assess cost, schedule and risk impacts of implementing the options on selected air defense assets across the joint services. - Downselect to the preferred approach for a first increment of capability that will provide the Warfighter an improved air picture for coordinated decision making. - Continue to develop the IAMD joint system architecture to maintain consistency with JIAMDO operational architecture. - With JIAMDO, complete operational benefit assessment using Virtual Warfare Center (VWC).			
Accomplishments/Planned Programs Subtotals	97.513	100.895	138.825

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2015</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u>	<u>Total Cost</u>
			<u>Base</u>	<u>OCO</u>	<u>Total</u>					<u>Complete</u>	<u>Total Cost</u>
• 0603881C: Ballistic Missile	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing

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

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

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

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Future Concepts and Planning - Future Concepts - Architecture CSS	C/CPFF	Sparta : AL	0.000	-		1.249	Oct 2013	2.733	Oct 2014	-		2.733	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Architecture Support	Various	Various : VA, AL	0.000	-		-		1.614	Oct 2014	-		1.614	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - CSS	C/CPAF	CSC : AL	11.926	4.032		3.679	Oct 2013	3.984	Oct 2014	-		3.984	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 1	MIPR	SNL : CA	1.190	0.291		0.290	Oct 2013	0.622	Oct 2014	-		0.622	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 3	MIPR	MIT/LL : MA	0.000	-		0.328	Oct 2013	0.328	Oct 2014	-		0.328	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 4	MIPR	JHU/LL : VA	0.000	1.400		0.540	Oct 2013	0.544	Oct 2014	-		0.544	Continuing	Continuing	Continuing
Future Concepts and Planning - Future	MIPR	MITRE : VA	0.000	0.700		0.394	Oct 2013	-		-		-	Continuing	Continuing	Continuing

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

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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Concepts - FFRDC / UARC 5															
Future Concepts and Planning - Future Concepts - FFRDC / UARC 6	MIPR	Aerospace : CA	0.000	0.833		0.333	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - FFRDC / UARC 7	MIPR	Univ AL Huntsville : AL	0.000	0.300		-		-		-		-	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Industry	C/CPAF	Boeing : AL	16.659	3.453		1.693	Oct 2013	-		-		-	-	21.805	-
Future Concepts and Planning - Future Concepts - OGA	MIPR	AMRDEC : AL	0.000	1.800		-		-		-		-	Continuing	Continuing	Continuing
Future Concepts and Planning - Future Concepts - Support	Various	MDA : VA / AL	0.000	1.972		1.136	Oct 2013	2.626	Oct 2014	-		2.626	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 4	MIPR	SNL : CA	0.000	-		0.350	Oct 2013	0.876	Oct 2014	-		0.876	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 1	C/CPFF	CSC : AL	16.153	6.510		6.019	Oct 2013	3.730	Oct 2014	-		3.730	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - CSS 3	C/CPFF	MEI : AL	0.000	-		0.275	Oct 2013	0.360	Oct 2014	-		0.360	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - FFRDC/UARC 1	MIPR	MIT/LL : MA	1.793	0.888		-		-		-		-	-	2.681	-
Requirements and Design - Reqts & Design - FFRDC/UARC 2	MIPR	LLNL : CA	0.289	0.216		0.095	Oct 2013	0.517	Oct 2014	-		0.517	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - HAENS Spt	Various	Various : Various	0.000	-		-		0.291	Oct 2014	-		0.291	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Requirements and Design - Reqts & Design - Industry	C/CPAF	Boeing : AL	48.369	11.472		9.210	Oct 2013	9.740	Oct 2014	-		9.740	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - MDA	Various	MDA : AL, VA	0.000	9.931		8.537	Oct 2013	12.032	Oct 2014	-		12.032	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - OGA	MIPR	AMRDEC : AL	0.000	1.950		-		-		-		-	Continuing	Continuing	Continuing
Requirements and Design - Reqts & Design - Other DoD	MIPR	NSWC : IN	3.816	0.116		-		-		-		-	-	3.932	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS	C/CPFF	CSC : AL	18.347	1.246		1.152	Oct 2013	-		-		-	-	20.745	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - CSS 2	C/CPFF	SAIC : VA, AL	0.000	1.203		4.020	Oct 2013	4.917	Oct 2014	-		4.917	Continuing	Continuing	Continuing
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - FFRDC/ UARC 2	MIPR	MITRE : VA	5.488	0.123		-		-		-		-	-	5.611	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - Industry	C/CPAF	Boeing : AL	59.309	3.158		-		-		-		-	-	62.467	-
Systems Engineering, Engineering Analysis and Quick Response Team - Sys Engrg, QRT - MDA	Various	MDA : VA, AL	0.000	1.193		1.229	Oct 2013	3.934	Oct 2014	-		3.934	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - CSS 1	C/CPFF	MEI - MiDAESS : AL	0.000	1.000		5.700	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Threat Engineering - Threat Engrg - CSS 2	C/CPFF	Torch Technologies : AL	6.966	3.344		-		-		-		-	-	10.310	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Threat Engineering - Threat Engrg - FFRDC/ UARC 1	FFRDC	JHU APL : VA	1.791	0.617		1.360	Oct 2013	-		-		-	-	3.768	-
Threat Engineering - Threat Engrg - FFRDC/ UARC 2	MIPR	MIT-LL : MA	5.385	1.097		0.584	Oct 2013	-		-		-	-	7.066	-
Threat Engineering - Threat Engrg - FFRDC/ UARC 3	MIPR	SNL : CA	4.130	0.511		0.308	Oct 2013	-		-		-	-	4.949	-
Threat Engineering - Threat Engrg - FFRDC/ UARC 4	MIPR	LLNL : CA	0.999	0.369		0.173	Oct 2013	-		-		-	-	1.541	-
Threat Engineering - Threat Engrg - OGA	MIPR	AMRDEC : AL	0.000	1.850		-		-		-		-	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - Anti-Tamper Support	MIPR	NSWC Crane : IN	4.954	0.200		0.700	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - CSS 2	C/CPAF	CSC - MiDAESS : AL	0.000	1.551		0.450	Oct 2013	0.213	Oct 2014	-		0.213	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - CSS/Travel	C/CPFF	DRC, Cobham : CA	2.890	-		-		-		-		-	Continuing	Continuing	Continuing
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - Commonality and Standards	C/CPFF	DRAPER : MA	6.265	-		-		-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Anti-Tamper and Engineering Manufacturing Readiness Levels Development - AT & EMRL - MDA	Various	MDA : AL, VA	0.000	3.260		3.399	Oct 2013	5.470	Oct 2014	-		5.470	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Independ Tech Assess - FFRDC/ UARC 4	MIPR	GTRI : GA	6.736	0.385		-		-		-		-	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - CSS	C/CPAF	CSC - MiDAESS : AL	0.000	1.000		1.000	Oct 2013	1.000	Oct 2014	-		1.000	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - FFRDC/UARC 1	MIPR	Aerospace : CA	10.936	1.215		1.215	Oct 2013	1.500	Oct 2014	-		1.500	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - FFRDC/UARC 2	FFRDC	JHU APL : VA	5.051	1.471		1.464	Oct 2013	2.280	Oct 2014	-		2.280	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - FFRDC/UARC 6	MIPR	MIT/LL : MA	13.120	0.776		2.033	Oct 2013	1.875	Oct 2014	-		1.875	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - FFRDC/UARC 7	MIPR	MITRE : VA	7.705	2.278		1.778	Oct 2013	2.490	Oct 2014	-		2.490	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - MDA	Various	MDA : VA, AL	0.000	2.747		2.969	Oct 2013	4.981	Oct 2014	-		4.981	Continuing	Continuing	Continuing
System-Level Verification and Assessment (was Independent Technical Assessment) - Sys V&A - OGA	MIPR	AMRDEC : AL	0.000	1.441		-		-		-		-	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 1	MIPR	Aerospace : CA	4.277	2.159		2.116	Oct 2013	1.095	Oct 2014	-		1.095	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 2	MIPR	MIT/LL : MA	2.348	1.028		1.450	Oct 2013	1.114	Oct 2014	-		1.114	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 3	FFRDC	MITRE : VA	1.816	1.054		1.343	Oct 2013	1.099	Oct 2014	-		1.099	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 4	FFRDC	JHU/APL : VA	2.162	1.143		1.300	Oct 2013	0.751	Oct 2014	-		0.751	Continuing	Continuing	Continuing
Knowledge Centers - KC - FFRDC/UARC 5	FFRDC	SDL : MA	0.215	0.077		-		-		-		-	-	0.292	-
Knowledge Centers - KC - FFRDC/UARC 7	MIPR	GTRI : GA	2.256	0.583		1.100	Oct 2013	-		-		-	-	3.939	-
Knowledge Centers - KC - FFRDC/UARC 8	MIPR	JPL : CA	1.096	0.420		-		-		-		-	-	1.516	-
Knowledge Centers - KC - FFRDC/UARC 9	MIPR	ORNL : TN	0.854	0.325		-		-		-		-	-	1.179	-
Knowledge Centers - KC - MDA	Various	MDA : AL, VA	0.000	6.602		5.344		7.557	Oct 2014	-		7.557	Continuing	Continuing	Continuing
Knowledge Centers - KC - OGA	MIPR	AMRDEC : AL	0.056	0.159		-		-		-		-	-	0.215	-
Knowledge Centers - KC - Other	MIPR	Northrop Grumman : VA	0.170	0.136		-		-		-		-	-	0.306	-
Knowledge Centers - KC - Various	MIPR	Various : Various	0.000	-		-		1.653	Oct 2014	-		1.653	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Risk Management - Risk Mgt - Analysis	Various	MDA : VA, AL	0.044	0.231		3.451	Oct 2013	5.765	Oct 2014	-		5.765	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Analysis Spt	Various	Various : Various	0.000	-		1.129	Oct 2013	0.357	Oct 2014	-		0.357	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - CSS	C/CPFF	MEI : AL	0.656	3.490		0.275	Oct 2013	-		-		-	-	4.421	-
Risk Management - Risk Mgt - FFRDC/UARC	MIPR	MITRE : VA	0.392	2.068		0.625	Oct 2013	0.579	Oct 2014	-		0.579	Continuing	Continuing	Continuing
Risk Management - Risk Mgt - Other 1	MIPR	DAU : VA	0.026	0.139		-		-		-		-	-	0.165	-
Manufacturing and Producibility - Mfg and Producibility	Various	Various : AL	0.000	-		0.632		0.636	Nov 2014	-		0.636	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - CSS 1	C/CPFF	CSC : AL	0.000	-		0.351		0.537	Nov 2014	-		0.537	Continuing	Continuing	Continuing
Manufacturing and Producibility - Mfg and Producibility - OGA Support	MIPR	AMRDEC : AL	0.000	-		1.517		2.953	Nov 2014	-		2.953	Continuing	Continuing	Continuing
Discrimination - Discrimination - CSS	C/CPFF	CSC : AL	0.000	-		2.600	Oct 2013	8.731	Oct 2014	-		8.731	Continuing	Continuing	Continuing
Discrimination - Discrimination - OGA	MIPR	AMRDEC : AL	0.000	-		-		7.004	Oct 2014	-		7.004	Continuing	Continuing	Continuing
Discrimination - Discrimination - Support	Various	MDA : AL, VA	0.000	-		7.230	Oct 2013	10.046	Oct 2014	-		10.046	Continuing	Continuing	Continuing
Discrimination - Discrimination - Various	Various	Various : AL, VA	0.000	-		6.770	Oct 2013	6.191	Oct 2014	-		6.191	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - FFRDC	Various	Various : AL, VA, MD	0.000	-		-		1.410	Nov 2014	-		1.410	Continuing	Continuing	Continuing
Integrated Air and Missile Defense (IAMD) - IAMD - Support	Various	MiDAESS : AL, VA, CO	0.000	-		-		2.115	Nov 2014	-		2.115	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Air and Missile Defense (IAMD) - IAMD - Various	MIPR	DoD Activities : Various	0.000	-		-		10.575	Nov 2014	-		10.575	Continuing	Continuing	Continuing
Subtotal			276.635	97.513		100.895		138.825		-		138.825	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	276.635	97.513	100.895	138.825	-	138.825	-	-	-

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Aegis BMD 5.1 System Design Review (SDR) #2	▲																											
System/Subsystem Requirements Review - FY 2013	▲																											
BMD System Requirements Review (SRR) Part 1	▲																											
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2013			▲																									
Ballistic Missile Defense System Specification (BMD SS) - FY 2013				▲																								
Integrated Master Assessment Plan (IMAP) v.13.2 / Update - FY 2013			▲																									
Element Preliminary Design Reviews - FY 2013		▲																										
System Engineering Plan (SEP) Update - FY 2014					▲																							
Element/Component Characterization for Analysis (E/CCA) - 1Q - FY 2013	▲																											
Aegis BMD 5.1 System Design Review (SDR) #3		▲																										
Update to Ballistic Missile Defense System Interface Control Document (SICD) FY 2013	▲																											
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2013				▲																								
Master Integration Plan (MIP) - FY 2013				▲																								
Provide Independent Assessments to MDA - FY 2013				▲																								

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Update Phased Adaptive Approach Capability Planning Specifications (CPS) - FY 2013	▲																											
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014					▲																							
Aegis BMD 5.1 Preliminary Design Review (PDR)					▲																							
Adversary Data Package (ADP) - FY 2014					▲																							
Element Preliminary Design Reviews - FY 2014						△																						
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014							△																					
Ballistic Missile Defense System Design Review - FY 2014							△																					
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014								△																				
Provide Independent Assessments to MDA - FY 2014								△																				
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014								△																				
Adversary Data Package (ADP) - FY 2015									△																			
System/Subsystem Requirements Review - FY 2015									△																			
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2015									△																			
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2015									△																			
Element Design Reviews - FY 2015										△																		

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ballistic Missile Defense System Specification (BMD SS) - FY 2015									▲																			
Ballistic Missile Defense System Engineering Review - FY 2015									▲																			
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2015									▲																			
Provide Independent Assessments to MDA - FY 2015												▲																
Update Master Integration Plan (MIP) - FY 2015												▲																
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015												▲																
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016													▲															
Adversary Data Package (ADP) - FY 2016													▲															
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2016													▲															
System Engineering Plan (SEP) Update - FY 2016														▲														
Element Design Reviews - FY 2016														▲														
Ballistic Missile Defense System Engineering Review - FY 2016															▲													
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016															▲													
Update Achievable Capabilities List - FY 2016															▲													
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2016															▲													
Update Master Integration Plan (MIP) - FY 2016																▲												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016															▲													
Provide Independent Assessments to MDA - FY 2016															▲													
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016															▲													
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2017															▲													
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2017															▲													
Adversary Data Package (ADP) - FY 2017															▲													
System Engineering Plan (SEP) Update - FY 2017																▲												
Element Design Reviews - FY 2017																▲												
Ballistic Missile Defense System Specification (BMD SS) - FY 2017																▲												
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2017																	▲											
Ballistic Missile Defense System Engineering Review - FY 2017																	▲											
Provide Independent Assessments to MDA - FY 2017																		▲										
Update Master Integration Plan (MIP) - FY 2017																		▲										
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017																			▲									
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018																				▲								

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Adversary Data Package (ADP) - FY 2018																				▲								
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2018																				▲								
Element Design Reviews - FY 2018																				▲								
Ballistic Missile Defense System Engineering Review - FY 2018																				▲								
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018																				▲								
Update Achievable Capabilities List - FY 2018																				▲								
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2018																				▲								
Update Master Integration Plan (MIP) - FY 2018																					▲							
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2018																				▲								
Provide Independent Assessments to MDA - FY 2018																				▲								
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018																				▲								
Adversary Data Package (ADP) - FY 2019																						▲						
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2019																						▲						
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2019																						▲						
System Engineering Plan (SEP) Update - FY 2019																							▲					
Ballistic Missile Defense System Specification (BMD SS) - FY 2019																							▲					

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Element Design Reviews - FY 2019																												△		
Ballistic Missile Defense System Engineering Review - FY 2019																														△
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2019																														△
Update Master Integration Plan (MIP) - FY 2019																														△
Provide Independent Assessments to MDA - FY 2019																														△
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2019																														△

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Aegis BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
System/Subsystem Requirements Review - FY 2013	1	2013	1	2013
BMD System Requirements Review (SRR) Part 1	1	2013	1	2013
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY 2013	3	2013	3	2013
Ballistic Missile Defense System Specification (BMD SS) - FY 2013	4	2013	4	2013
Integrated Master Assessment Plan (IMAP) v.13.2 / Update - FY 2013	3	2013	3	2013
Element Preliminary Design Reviews - FY 2013	2	2013	2	2013
System Engineering Plan (SEP) Update - FY 2014	2	2014	2	2014
Element/Component Characterization for Analysis (E/CCA) - 1Q - FY 2013	1	2013	1	2013
Aegis BMD 5.1 System Design Review (SDR) #3	2	2013	2	2013
Update to Ballistic Missile Defense System Interface Control Document (SICD) FY 2013	1	2013	1	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
Provide Independent Assessments to MDA - FY 2013	4	2013	4	2013
Update Phased Adaptive Approach Capability Planning Specifications (CPS) - FY 2013	1	2013	1	2013
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2014	1	2014	1	2014
Aegis BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
Adversary Data Package (ADP) - FY 2014	1	2014	1	2014
Element Preliminary Design Reviews - FY 2014	2	2014	2	2014
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2014	3	2014	3	2014
Ballistic Missile Defense System Design Review - FY 2014	3	2014	3	2014
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2014	4	2014	4	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
Provide Independent Assessments to MDA - FY 2014	4	2014	4	2014
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2014	4	2014	4	2014
Adversary Data Package (ADP) - FY 2015	1	2015	1	2015
System/Subsystem Requirements Review - FY 2015	1	2015	1	2015
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2015	1	2015	1	2015
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2015	1	2015	1	2015
Element Design Reviews - FY 2015	2	2015	2	2015
Ballistic Missile Defense System Specification (BMD SS) - FY 2015	2	2015	2	2015
Ballistic Missile Defense System Engineering Review - FY 2015	3	2015	3	2015
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2015	3	2015	3	2015
Provide Independent Assessments to MDA - FY 2015	4	2015	4	2015
Update Master Integration Plan (MIP) - FY 2015	4	2015	4	2015
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2015	4	2015	4	2015
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2016	1	2016	1	2016
Adversary Data Package (ADP) - FY 2016	1	2016	1	2016
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2016	1	2016	1	2016
System Engineering Plan (SEP) Update - FY 2016	2	2016	2	2016
Element Design Reviews - FY 2016	2	2016	2	2016
Ballistic Missile Defense System Engineering Review - FY 2016	3	2016	3	2016
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2016	3	2016	3	2016
Update Achievable Capabilities List - FY 2016	3	2016	3	2016
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2016	3	2016	3	2016
Update Master Integration Plan (MIP) - FY 2016	4	2016	4	2016
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2016	4	2016	4	2016
Provide Independent Assessments to MDA - FY 2016	4	2016	4	2016
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2016	4	2016	4	2016

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2017	1	2017	1	2017
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2017	1	2017	1	2017
Adversary Data Package (ADP) - FY 2017	1	2017	1	2017
System Engineering Plan (SEP) Update - FY 2017	2	2017	2	2017
Element Design Reviews - FY 2017	2	2017	2	2017
Ballistic Missile Defense System Specification (BMD SS) - FY 2017	2	2017	2	2017
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2017	3	2017	3	2017
Ballistic Missile Defense System Engineering Review - FY 2017	3	2017	3	2017
Provide Independent Assessments to MDA - FY 2017	4	2017	4	2017
Update Master Integration Plan (MIP) - FY 2017	4	2017	4	2017
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2017	4	2017	4	2017
Ballistic Missile Defense System Description Document (BMD SDD) - FY 2018	1	2018	1	2018
Adversary Data Package (ADP) - FY 2018	1	2018	1	2018
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2018	1	2018	1	2018
Element Design Reviews - FY 2018	2	2018	2	2018
Ballistic Missile Defense System Engineering Review - FY 2018	3	2018	3	2018
Ballistic Missile Defense System Interface Control Documents (SICD) - FY 2018	3	2018	3	2018
Update Achievable Capabilities List - FY 2018	3	2018	3	2018
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2018	3	2018	3	2018
Update Master Integration Plan (MIP) - FY 2018	4	2018	4	2018
Technical Objectives & Goals / Effectiveness Metrics Standard Updates - FY 2018	4	2018	4	2018
Provide Independent Assessments to MDA - FY 2018	4	2018	4	2018
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2018	4	2018	4	2018
Adversary Data Package (ADP) - FY 2019	1	2019	1	2019
Update to Integrated Master Assessment Plan (IMAP) - 1Q FY 2019	1	2019	1	2019
Update to Ballistic Missile Defense System Description Document (BMD SDD) - FY2019	1	2019	1	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD24 / System Engineering & Integration
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Events	Start		End	
	Quarter	Year	Quarter	Year
System Engineering Plan (SEP) Update - FY 2019	2	2019	2	2019
Ballistic Missile Defense System Specification (BMD SS) - FY 2019	2	2019	2	2019
Element Design Reviews - FY 2019	2	2019	2	2019
Ballistic Missile Defense System Engineering Review - FY 2019	3	2019	3	2019
Update to Integrated Master Assessment Plan (IMAP) - 3Q FY 2019	3	2019	3	2019
Update Master Integration Plan (MIP) - FY 2019	4	2019	4	2019
Provide Independent Assessments to MDA - FY 2019	4	2019	4	2019
Element/Component Characterization for Analysis (E/CCA) - 4Q - FY 2019	4	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MT23 / Enabling - Test			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT23: <i>Enabling - Test</i>	-	29.288	42.814	22.661	-	22.661	18.897	19.637	19.216	17.299	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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):

- 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
- 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 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.

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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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.

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.

The distinct capabilities of MDA's Modeling and Simulation (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 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 2013	FY 2014	FY 2015
<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 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Updated the Master Integration Plan (MIP) to incorporate 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. 	15.038	31.773	-
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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. <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. <p>FY 2015 Plans:</p> <p>The FY 2015 plans for this activity are realigned within new MT23 Accomplishment/Planned Program: Engineering and Analysis.</p>				
<p>Title: Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations</p> <p align="right">Articles:</p>		14.250	11.041	-
<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 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Event Support Operations - Collaborated with Elements, Test Community, System Engineering, and Operational Test Agencies (OTAs) to ensure Modeling and Simulation (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 - Provided System-level education, Validation and Accreditation (VV&A) 		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Developed 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 approved Integrated Master Test Plan (IMTP) - Provided Annual Accreditation Assessments, Reports and Briefings 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 and specified system post-flight reconstructions events to optimize the body of evidence and analysis supporting system-level BMDS accreditation; performed 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 approved Integrated Master Test Plan (IMTP) - Worked closely with Elements, the Test Community, and Operational Test Agency (OTA) to ensure M&S for each event met intended uses and objectives, and had 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 (consistent and correct), and modeled communications and architecture (behave properly); and ensured that M&S interoperability was adequately addressed - Developed and updated M&S Directives, Policies, Standards and Methodology Guides to support advancements in VV&A process and methodology to maximize improvement to M&S Accreditation. - Conducted annual review of BMDS Element VV&A programs and provided recommendations for improvements in M&S capabilities and planned Verification and Validation (V&V) activities to accelerate and optimize M&S Accreditation - Led 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 - Ensured that individual BMDS elements and components properly VV&A their own models - Developed and presented M&S objectives, event requirements, Accreditation status and strategic VV&A plans as part of MDA BMDS Integrated Master Test Plan (IMTP) development. - Developed and updated additions to the Integrated Master VV&A Plan (IMVP) to align long-range VV&A planning with MDA long-range planned events, assessments and fielding decisions. - Developed 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 Ground Tests, Operational Tests, Flight Tests and Combatant Command (COCOM) Exercises. - Completed 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. - Supported accreditation for Kinetic Impact Debris Distribution (KIDD) as post-intercept debris modeling tool. - Supported accreditation for Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS) as engagement lethality modeling tool for Patriot PAC-3, THAAD, and GM. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
--------------------------------------------------	---------------------------------------------------------------------------------	--------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014		FY 2015
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<p>- Planned and produced 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 (PATAs), wargames, and exercises.</p> <p>- Event Integration/Support Operations:</p> <ul style="list-style-type: none"> - Performed product-level Verification, Validation & Accreditation (VV&A). - Conducted requirements management for product VV&A (e.g., OSC, OPTISIG, KIDD, PEELS, PEGEM) - Conducted Independent Verification & Validation (IV&V) on product modifications for Core Lethality Models (such as PEELS, KIDD). - Developed missile model and integrated threat package Verification & Validation (V&V) reports to support Integrated Master Test Plan (IMTP) events. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -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. <p>FY 2014 decrease is consistent with the activities defined in the IMTP.</p> <p>FY 2015 Plans:</p> <p>The FY 2015 plans for this activity are realigned within new MT23 Accomplishment/Planned Program: Engineering and Analysis.</p>				
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Title: Engineering and Analysis				22.661
	Articles:	-	-	-

Description: N/A

FY 2013 Accomplishments:
N/A

FY 2014 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<p>N/A</p> <p>FY 2015 Plans: Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP):</p> <ul style="list-style-type: none"> - Design test architecture, defines target requirements, and generate appropriate scenarios for ground and flight tests. - Define test objectives and assessment criteria for all System level test events to anchor Modeling and Simulation (M&S) and address data collection requirements. - Allocate and track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency. - Perform System-level and interoperability analysis. - Participate in major test reviews. - Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports (BDR) within the Failure Reporting, Analysis, and Corrective Action System (FRACAS) - Produce the threat data required to enable BMDS ground tests, flight tests and performance assessment. - Utilize models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates. - Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements. - Analyze test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data. - Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration. - Develop and provide capability upgrades to test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS), Assessment Parameter EXtraction (APEX) to enhance analysis capability and efficiency. - Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments. - Provide engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), ManPower Loading (MPL). - Develop and provide infrastructure, software, and associated MDA/IA compliance for the RApid Scenario Prototype (RASP) capability. - Develop and optimize candidate ground test scenarios and produce the associated scenario data packages. - Develop and establish hardware-in-the-loop (HWIL) M&S integration test cases for ground and flight tests (pre-post mission). - Provide modeling and technical analysis support during Combatant Command (COCOM) wargames and exercises. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Develop, deliver, and present the Quick Look Brief (QLB), Executive Quick Look Brief (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR).			
- Develop and establish Hardware-in-the-loop (HWIL) M&S Integration Test Cases for flight and ground tests.			
- Conduct M&S HWIL Integration Bench Mark testing for ground tests by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture.			
- Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions.			
Accomplishments/Planned Programs Subtotals	29.288	42.814	22.661

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - CSS	C/CPFF	Various - CSS : AL	0.000	0.654		5.714	Oct 2013	-		-		-	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	-		2.862	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - FFRDC/ UARC 2	MIPR	GTRI : AL, VA	0.000	0.555		0.635	Oct 2013	-		-		-	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	0.110		0.637	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification	C/CPAF	Boeing : AL	0.000	8.524		21.925	Oct 2013	-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
and Assessment - SE&I - IMTP SE&I - Industry															
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - OGA	MIPR	AMRDEC : AL	0.000	4.891		-		-		-		-	Continuing	Continuing	Continuing
Integrated Master Test Plan (IMTP) Engineering, Integration, Verification and Assessment - SE&I - IMTP SE&I - OGA 2	MIPR	NSWC : VA	0.000	0.304		-		-		-		-	Continuing	Continuing	Continuing
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	-		2.355	Oct 2013	-		-		-	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	2.394		2.655	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - OGA Support	MIPR	AMRDEC : AL	0.000	8.510		-		-		-		-	Continuing	Continuing	Continuing
Modeling/Simulation (M/S) Verification, Validation and Accreditation (VV/A) and Test Operations - IMTP M&S - Performance Assessment VV&A	MIPR	AMRDEC : AL, CO	0.000	3.346		6.031	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - CSS Support	C/CPFF	Torch Technologies : AL	0.000	-		-		2.320	Oct 2014	-		2.320	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering and Analysis - Engineering & Analysis - CSS Support (2)	C/CPFF	CSC : AL	0.000	-		-		2.810	Oct 2014	-		2.810	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : VA, AL	0.000	-		-		4.604	Oct 2014	-		4.604	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - OGA Support	MIPR	AMRDEC : AL	0.000	-		-		10.120	Oct 2014	-		10.120	Continuing	Continuing	Continuing
Engineering and Analysis - Engineering & Analysis - Technical Support	MIPR	Northrop Grumman : VA, AL	0.000	-		-		2.807	Oct 2014	-		2.807	Continuing	Continuing	Continuing
Subtotal			0.000	29.288		42.814		22.661		-		22.661	-	-	-

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	29.288	42.814	22.661	-	22.661	-	-	-

Remarks

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
System Engineering Assessment Report (SEAR) - FY 2013	▲																											
Update to Integrated Master Test Plan (IMTP) - 2Q - FY 2013		▲																										
Master Integration Plan (MIP) - FY 2013				▲																								
Update to Integrated Master Test Plan (IMTP) - 1Q - FY 2014					▲																							
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2014						△																						
Update to Integrated Master Assessment Plan (IMAP) - 2Q - FY 2014						△																						
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2014								△																				
Master Integration Plan (MIP) - FY 2014								△																				
Integrated Master Assessment Plan (IMAP) - 4Q - FY 2014								△																				
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2015										△																		
Flight Test, Operational (FTO) 02 - Event 1											○																	
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2015												△																
Flight Test, Operational (FTO) 02 - Event 2												○																
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2016													△															
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2016														△														
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2017															△													
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2017																△												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2018																												
Flight Test, Operational (FTO) 03 - Event 2																												
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2018																												
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2019																												
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2019																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MT23 / Enabling - Test

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
Master Integration Plan (MIP) - FY 2013	4	2013	4	2013
Update to Integrated Master Test Plan (IMTP) - 1Q - FY 2014	1	2014	1	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2014	2	2014	2	2014
Update to Integrated Master Assessment Plan (IMAP) - 2Q - FY 2014	2	2014	2	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2014	4	2014	4	2014
Master Integration Plan (MIP) - FY 2014	4	2014	4	2014
Integrated Master Assessment Plan (IMAP) - 4Q - FY 2014	4	2014	4	2014
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2015	2	2015	2	2015
Flight Test, Operational (FTO) 02 - Event 1	3	2015	3	2015
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2015	4	2015	4	2015
Flight Test, Operational (FTO) 02 - Event 2	4	2015	4	2015
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2016	2	2016	2	2016
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2016	4	2016	4	2016
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2017	2	2017	2	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2017	4	2017	4	2017
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2018	2	2018	2	2018
Flight Test, Operational (FTO) 03 - Event 2	3	2018	3	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2018	4	2018	4	2018
Integrated Master Test Plan (IMTP) Engineering Inputs - 2Q - FY 2019	2	2019	2	2019
Integrated Master Test Plan (IMTP) Engineering Inputs - 4Q - FY 2019	4	2019	4	2019
Flight Test, Operational (FTO) 03 - Event 1	3	2020	3	2020

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD28 / Intelligence & Security			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD28: <i>Intelligence & Security</i>	33.687	28.627	32.134	40.231	-	40.231	41.283	42.075	43.569	44.690	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

The Threat Systems Engineering activity has transferred in FY 2015 from project MD24, System Engineering & Integration, to this project.

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 cybersecurity systems engineering requirements for Continental United States (CONUS) and non-CONUS based BMDS assets. Define cybersecurity systems engineering and cybersecurity infrastructure intelligence requirements to focus Intelligence Community collection, analysis and production to target MDA/BMDS cyber vulnerabilities, and incorporate cybersecurity engineering requirements into the systems engineering process.

The Security and Intelligence Project captures five specific areas:

- 1) Intelligence
- 2) Counterintelligence
- 3) Cybersecurity Engineering
- 4) Research, Development Acquisition (RDA) Security
- 5) Threat Systems Engineering

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).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD28 / <i>Intelligence & Security</i>

1) The Intelligence Requirements Program furnishes highly classified intelligence on foreign threat ballistic missile systems to the missile defense community. This program provides a clearing house for MDA's requirements to be presented to the Intelligence Community for collection, analysis and production. The Intelligence Requirements Office gains an understanding of all MDA intelligence requirements, registers these requirements with the Intelligence Community, who in turn provides resulting data to be disseminated and archived in the MDA Intelligence Knowledge Base. Resulting intelligence and threat changes are provided to the BMDS System Engineer, who uses the threat data to reduce risk and improve BMDS performance against the evolving threat. 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 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.

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.

Pursuant to DoD Directive O-5240.02 (Counterintelligence) and other DoD CI policy issuances, Counterintelligence:

- Conducts CI Investigations: Initial inquiries into reported or suspected clandestine relationships between MDA personnel and agents of a foreign power or international terrorist organizations.
- Performs CI Collection: Systematically collects intelligence information via liaison relationships with U.S. and host-nation intelligence, CI and law enforcement organizations and debriefings of MDA foreign travelers.
- Performs CI Analysis and Production: Produces 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.
- Provides CI Functional Services: Conducts defensive CI activities in support of MDA programs (including Special Access Programs (SAP) and Research, Development, Acquisition (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.

3) Cybersecurity Engineering Program provides coherent cybersecurity systems engineering policy and guidance to BMDS system design and acquisition enhancing BMDS resiliency against existing and emerging cyber threats. It develops and coordinates 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. To fulfill this role, the BMDS Cybersecurity Engineering program works with Intelligence Requirements and Counterintelligence to obtain a comprehensive picture of the overall cyber threat for impacts to the BMDS design; identifies mitigation strategies and map to established National Security Systems (NSS) and DoD policy; and then influences the design by 1) identifying updates to the Core Standards and Requirements to implement Defense-in-Depth within planned development cycles (Builds); 2) providing oversight, coordination and management of cybersecurity technical requirements development and policy-mandated responsibilities; 3) coordinating evaluation of cybersecurity capability during BMDS tests, and; 4) assessing the validated cyber threat intelligence for impact to the BMDS design. To fulfill mission requirements, the program interfaces with relevant Cybersecurity Systems Engineering experts to assess requirements, documentation and cybersecurity system design and assessment criteria.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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4) Research, Development Acquisition (RDA) Security manages the MDA Information, Industrial, Acquisition Operations Security programs to protect acquisition, test, development, and fielding of BMDS capabilities. RDA Security conducts security reviews for all Congressional, Government Accountability Office (GAO), budget, Freedom of Information Act (FOIA), and Public Release actions; develops and coordinates Security Classification Guides (SCGs) and resolves questions regarding security classification; manages the MDA Industrial Security program to develop Contract Security Classification Specifications (DD-254s) for all classified MDA contracts and to resolve Foreign Ownership, Control, and Influence (FOCI) issues; and conducts Information Security (INFOSEC) staff assistance and program reviews for all MDA offices and security inquiries as required to identify and resolve security deficiencies that would place BMDS information at risk. RDA Security also supports program offices in assessing acquisition programs, first to identify critical program information (CPI) and critical components, then to analyze risk and recommend security measures to protect CPI and the BMDS supply chain. Systems Protection provides planning support for BMDS deployments by coordinating security requirements for deploying BMDS assets with the Combatant Commanders (COCOMs) and Services and developing and coordinating site security infrastructure designs in accordance with direction from the Deputy Secretary of Defense to protect critical BMDS assets. RDA Security conducts the MDA Declassification Program in compliance with Executive Order 13526 (Classified National Security Information), which requires 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.

5) The Threat Systems Engineering effort provides consistent definitions of adversary capabilities required for 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. Threat Systems Engineering also provides, develops, coordinates, and baselines targets and countermeasures requirements to define target capabilities that support BMDS flight test objectives. Threat Systems Engineering:

- Defines the BMDS threat space and support threat space allocation to specific BMDS capability increments.
- Guides missile requirements development, planning, and accreditation for BMDS ground and digital simulation tests
- Supports development of target system specifications; and guide targets requirements development, planning, and certification for BMDS flight tests
- Analyzes flight test target performance relative to threat intelligence assessments to support target system verification and certification
- Conducts threat model verification and validation to verify missile model meets specifications and is consistent with intelligence assessments at established Intel-Cut-Off Dates (ICOD).
- Produces threat models and scenario data for BMDS development events and establish threat consistency across the BMDS and Elements

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

	FY 2013	FY 2014	FY 2015
<p>Title: Intelligence</p> <p 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 2013 Accomplishments:</p> <p>- 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,</p>	<p>10.483</p> <p>-</p>	<p>11.695</p> <p>-</p>	<p>9.165</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>prioritized, and complete understanding of the vast requirements for foreign intelligence necessary to build a comprehensive BMDS.</p> <ul style="list-style-type: none"> - Continued to manage the intelligence collection requirements and engaged the Intelligence Community to ensure MDA requirements are 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 are viewed in proper context, receive the proper priority level, and are explicitly understood by the Intelligence Community. - 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. - 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 intelligence documents. - 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 provided to all Program Elements and MDA Test community 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>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Serve as designated intelligence broker between MDA and the Intelligence Community: -- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community -- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements -- Manage intelligence collection requirements, including specific requirements supporting individual ground and flight test events -- 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. <ul style="list-style-type: none"> -Provide up-to-date and accurate intelligence to Missile Defense community. -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. 			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<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> <p>FY 2015 Plans:</p> <p>-Serve as designated intelligence broker between MDA and the Intelligence Community:</p> <ul style="list-style-type: none"> -- Maintain and communicate prioritized, specific BMDS intelligence requirements to the Intelligence Community. -- Maintain a focused dialog with members of the Intelligence Community to ensure understanding, urgency and context of MDA intelligence requirements. <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 2015.</p> <p>FY 2015 decrease due to reprioritization of tasks and planned accomplishments constituting the Intelligence & Security mission.</p>			
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Title: Counterintelligence	4.814	5.423	5.253
Articles:	-	-	-

Description: The Counterintelligence effort protects personnel, activities, information and technologies from espionage and terrorism through defensive operations and activities.

FY 2013 Accomplishments:

- Continued to serve as the single point of contact with Federal, State and Local Law Enforcement and Counterintelligence Organizations. Fostered 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.
- Deployed organic counterintelligence teams to conduct defensive counterintelligence activities in support of BMDS fielding initiatives under the Phased Adaptive Approach and Foreign Military Sales Programs.
- Procured and fielded 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.
- Supported 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.

FY 2014 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD28 / <i>Intelligence & Security</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<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 support of BMDS fielding and deployment activities under the 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> <p><i>FY 2015 Plans:</i></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 support of BMDS fielding and deployment activities under the 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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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- Conduct CI in Cyberspace activities to detect malicious and insider threat activities targeting MDA administrative and fire control networks.			
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Title: Cybersecurity Engineering Program	Articles:	3.260	3.673	3.684
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Description: The Cybersecurity Engineering Program provides coherent cybersecurity systems engineering policy and guidance to BMDS system design and acquisition enhancing BMDS resiliency against existing and emerging cyber threats.

FY 2013 Accomplishments:

- Fulfilled 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).
- Defined Information Assurance/Computer Network Defense (IA/CND) requirements for continental U.S. (CONUS) and non-CONUS based BMDS assets consistently, comprehensively and definitively.
- Assessed 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.
- Developed and documented technical requirements and interfaces to execute an Integrated IA/CND Net-centric Architectural Concept.
- Enhanced 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.
- Assisted 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.

FY 2014 Plans:

- 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) by understanding the battle space and engineering for survivability.
- Ensure cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1.
- Develop and coordinate near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats.
- Define Cybersecurity Engineering requirements for the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets. Develop requirements for building cybersecurity into incremental BMDS Hardware and Software builds, up front. Monitor allocation of these requirements to the Elements. Recommend updates to the BMDS Core Standards to include new Cyber-related requirements specified by the Agency, the Combatant Commanders (COCOMS), the DOD, and the Federal Government.
- Assess the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems. Define the ``As Built`` and ``To Be`` Cybersecurity Systems Engineering concepts to support

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD28 / <i>Intelligence & Security</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>technical assessments and cybersecurity design solutions and implementation of recommendations impacted by the change in requirements. Recommend updates to the BMDS System Description Document, System Security Concept (SSC), and other planning documents to ensure cybersecurity issues are fully considered through the BMDS and element programs.</p> <ul style="list-style-type: none"> - Develop technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept. - Implement the National Security Agency (NSA) Community Gold Standard to enhance the cybersecurity posture of the BMDS by delivering expert, responsive, Cybersecurity Systems Engineering products and services supporting the Program Managers to meet BMDS and Cybersecurity Systems Engineering needs and requirements for Enhanced Homeland Defense and Enhanced Medium Range Ballistic Missile (MRBM) Defense. - Implement mitigations to cyber threats as system requirements and specifications to the BMDS design and architecture, ensuring mitigations trace to necessary components and interfaces supporting the BMDS mission. - Coordinate evaluation of cybersecurity capability during BMDS tests; develop verification and assessment strategies for system requirements. <p>FY 2015 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) by understanding the battle space; and engineering for survivability. - Ensure Cybersecurity is integrated into the Acquisition Process in accordance with DoD Instruction 8580.1. - Develop and coordinate near-term and long-term engineering changes to the BMDS that advance the resilience to cyber threats. - Define cybersecurity engineering requirements for the BMD System Specification for continental U.S. (CONUS) and non-CONUS based BMDS assets. Develop requirements for building cybersecurity into incremental BMDS Hardware and Software builds, up front. Monitor allocation of these requirements to the Elements. Recommend updates to the BMDS Core Standards to include new Cyber-related specifications specified by the Agency, the COCOMS, the DOD, and the Federal Government. - Assess the Cybersecurity Architecture to address gaps/disconnects, enhance interoperability, and realize efficiencies across all mission systems. Define the "As Built" and "To Be" Cybersecurity Systems Engineering concepts to support technical assessments and cybersecurity design solutions and implementation recommendations impacted by the change in requirements. Recommend updates to the BMDS System Description Document, System Security Concept (SSC), and other planning documents to ensure cybersecurity issues are fully considered through the BMDS and element programs. - Develop technical requirements and interface documentation to execute an Integrated Cybersecurity Engineering Net-centric Architectural Concept. - Implement the National Security Agency (NSA) Community Gold Standard to enhance the cybersecurity posture of the BMDS by delivering expert, responsive, Cybersecurity Systems Engineering products and services supporting the Program Managers to meet BMDS and Cybersecurity Systems Engineering needs and requirements for Enhanced Homeland Defense and Enhanced Medium Range Ballistic Missile (MRBM) Defense. 			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Implement mitigations to cyber threats as system requirements and specifications to the BMDS design and architecture, ensuring mitigations trace to necessary components and interfaces supporting the BMDS mission. - Coordinate evaluation of cybersecurity capability during BMDS tests; develop verification and assessment strategies for system requirements. 			
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Title: Research, Development Acquisition (RDA) Security	10.070	11.343	10.842
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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.	Articles: -	-	-
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FY 2013 Accomplishments:

- Performed all reviews supporting Agency public release, security classification, and required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR). Performed Information Security staff assistance reviews and assessments of 90 MDA programs, and coordinated required security incident reviews to identify and fix security deficiencies impacting Agency operations. The Industrial Security program provided security oversight for the Agency's classified contracts, drafting and coordinating DD254 ``Contract Security Classification Specification`` documents to support contracting efforts.
- Provided security support to Phased Adaptive Approach (PAA) and other directed BMDS systems deployments.
- Focused program protection planning on the continuing assessment of candidate critical program information (CPI) for Advanced Technology programs, notably including High Power Directed Energy and Small Business Innovative Research (SBIRS) projects, to identify technologies that will transition into MDA programs. Continued to work with the Counterintelligence team on Supply Chain Risk Management (SCRM) issues that could degrade the performance of BMDS systems.
- Provided dedicated on-site security and protection of BMDS resources and personnel at operational sites in Alaska, California and Colorado 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 was transferred from Program Wide Support into the Intelligence & Security budget.
- The Declassification Program requirements continued to expand in FY 2013, as the Agency conducted declassification reviews of historical documents 25 years old and older in accordance with Executive Order 13526, Classified National Security Information. The MDA production target was projected to be in excess of 5.7 million page equivalent historical records. To support this increasing requirement, MDA funded a project for high volume scanning of volumes of legacy hard copy documents into digital format that could then be processed, using intelligent software, to assist in identifying missile defense equities.

FY 2014 Plans:

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD28 / <i>Intelligence & Security</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Perform all reviews supporting Agency public release, security classification, and required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR) to ensure sensitive BMDS information is not inadvertently released into the public domain. - 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. - Provide security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents to support contracting efforts and ensure that 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, to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability. - Conduct program protection planning for 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. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Perform all reviews supporting Agency public release, security classification, and required Freedom of Information Act (FOIA) and Mandatory Declassification Reviews (MDR) to ensure sensitive BMDS information is not inadvertently released into the public domain. - 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. - Provide security oversight for the Agency's classified contracts by drafting and coordinating DD254 "Contract Security Classification Specification" documents to support contracting efforts and ensure that appropriate protections for BMDS sensitive information are applied within the supporting industrial base. - Provide security support to Phased Adaptive Approach (PAA) and deployments of AN-TPY-2 radars to the CENTCOM and PACOM areas of responsibility to ensure effective physical protection is provided to extremely low density/high demand emerging warfighter capability. 			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Conduct program protection planning for 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. - Per Executive Order 13525, Classified National Security Program, 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. 			
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Title: Threat Systems Engineering			
Articles:	-	-	11.287
	-	-	-

Description: Directly support a collaborative MDA Engineering effort to develop, test, and field BMDS capabilities. Provide representations of adversary missile capabilities based on best available intelligence information and develop, coordinate, and baseline BMDS-level targets and countermeasures requirements to define target capabilities that support BMDS flight test objectives. This activity was previously included under project MD24, System Engineering & Integration.

FY 2013 Accomplishments:
N/A

FY 2014 Plans:
N/A

FY 2015 Plans:

- Define, develop, and maintain the Ballistic Missile Defense System (BMDS) threat.
- Produce flight test targets and countermeasures requirements to support BMDS flight test testing.
- Produce or update threat specifications, models, and scenario data to support BMDS development & testing.
- Support verification and validation of threat models.
- Certify flight test targets meet the established requirements.
- Analyze threat representation of flight test targets and ensure target requirements are based on intelligence assessments and the threat.

Accomplishments/Planned Programs Subtotals	28.627	32.134	40.231
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0305103C: <i>Cyber Security Initiative</i>	-	0.946	0.961	-	0.961	0.984	1.003	1.022	1.048	Continuing	Continuing

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Intelligence - Analysis and Support	C/FFP	Lockheed Martin : Gaithersburg, VA	25.917	-		-		-		-		-	Continuing	Continuing	Continuing
Intelligence - Intelligence Analysis & Support	Various	MDA : VA, AL, CO	0.000	5.920		7.280		4.734	Nov 2014	-		4.734	Continuing	Continuing	Continuing
Intelligence - Intelligence Applications	MIPR	SMDC : Huntsville, AL	6.470	-		-		-		-		-	Continuing	Continuing	Continuing
Intelligence - Intelligence Collections	MIPR	NASIC : Wright-Patterson AFB, OH	1.300	-		-		-		-		-	Continuing	Continuing	Continuing
Intelligence - Intelligence Support	C/CPFF	Booz Allen Hamilton : AL, VA, CO	0.000	4.051		3.900		3.861	Nov 2014	-		3.861	Continuing	Continuing	Continuing
Intelligence - Intelligence Support (2)	C/CPFF	Northrop Grumman : AL, CO	0.000	0.512		0.515		0.570	Nov 2014	-		0.570	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis & Support	Various	MDA : AL, CO, VA	0.000	1.887		-		2.069	Nov 2014	-		2.069	Continuing	Continuing	Continuing
Counterintelligence - CI Analysis and Support 2	C/CPFF	Booz Allen Hamilton : McLean, VA	0.000	2.927		5.423	Apr 2014	3.184	Nov 2014	-		3.184	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cyber Threat 1	C/CPFF	Mantech : VA	0.000	1.052		3.673	Jul 2014	1.355	Jan 2015	-		1.355	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity - FFRDC	FFRDC	Aerospace : CA	0.000	1.050		-		0.540	Nov 2014	-		0.540	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Cybersecurity Engineering Program - Cybersecurity - FFRDC (2)	FFRDC	MITRE : VA	0.000	0.446		-		0.538	Nov 2014	-		0.538	Continuing	Continuing	Continuing
Cybersecurity Engineering Program - Cybersecurity Engineering	Various	MDA : VA, AL	0.000	0.712		-		1.251	Nov 2014	-		1.251	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security - RDA Analysis & Support	C/CPFF	Mantech : Falls Church, VA	0.000	3.101		5.243	Oct 2013	4.473	Nov 2014	-		4.473	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security - RDA Declass Analysis	C/CPFF	Booz-Allen Hamilton : McLean, VA	0.000	1.146		6.100	Oct 2013	1.476	Nov 2014	-		1.476	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security - RDA Security Analysis	Various	MDA : VA, AL	0.000	5.823		-		3.266	Nov 2014	-		3.266	Continuing	Continuing	Continuing
Research, Development Acquisition (RDA) Security - RDA Security Support	Various	Various : VA, AL, CO	0.000	-		-		1.627	Nov 2014	-		1.627	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering	Various	MDA : VA, AL, CO	0.000	-		-		2.458	Nov 2014	-		2.458	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS	C/CPFF	MEI : AL	0.000	-		-		5.561	Nov 2014	-		5.561	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - CSS (2)	C/CPFF	CSC : AL, VA	0.000	-		-		0.901	Nov 2014	-		0.901	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat Systems Engineering - FFRDC	FFRDC	MIT/LL : MA	0.000	-		-		0.684	Nov 2014	-		0.684	Continuing	Continuing	Continuing
Threat Systems Engineering - Threat	FFRDC	JHU/APL : MD	0.000	-		-		1.683	Nov 2014	-		1.683	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD28 / Intelligence & Security
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			33.687	28.627		32.134		40.231		-		40.231	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	33.687	28.627	32.134	40.231	-	40.231	-	-	-

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD30 / BMD Information Management Systems			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD30: BMD Information Management Systems	-	97.258	92.411	97.097	-	97.097	95.087	104.976	91.876	93.524	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Beginning in FY 2014, Information Assurance/Computer Network Defense content in Budget Project MD30 of Enabling Programs Element 0603890C to a new Cyber Operations Budget Project MC30 in Program Element 0603890C.

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), Cybersecurity, 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".

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) 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 cybersecurity, 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 		

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

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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 2013	FY 2014	FY 2015
<p>Title: End User Support</p> <p align="right">Articles:</p> <p>Description: Provides for operations, maintenance and helpdesk support to each MDA IT user desktop capability.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Sustained 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. -Monitored networks for user compliance and DoD policies, and report incidents. -Maintained Printing and Copy Services (386 multi-functional device printers and 12 print servers). -Sustained email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks). -Sustained file services (8 file servers and 4 storage area networks). -Maintained Directory Services (24 Active Directory and domain controller servers). -Maintained Authentication services (Public Key Infrastructure/Common Area Card). -Maintained current hardware and software licenses for IT operational systems. -Maintained an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter. -Maintained IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys). -Funded MDA Chief Information Office (CIO) civilian salaries. <p>FY 2014 Plans: Continue efforts as listed under FY 2013 plans for End User Support.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -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. 	29.803	33.088	36.970
	-	-	-

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Monitor networks for user compliance and DoD policies, and report incidents.</p> <p>-Maintain Printing and Copy Services (386 multi-functional device printers and 12 print servers).</p> <p>-Sustain email services (24 Exchange servers, 4 BlackBerry Enterprise Services servers and 2 archiving storage area networks).</p> <p>-Sustain file services (8 file servers and 4 storage area networks) -Maintain Directory Services (24 Active Directory and domain controller servers).</p> <p>-Maintain Authentication services (Public Key Infrastructure/Common Area Card) -Maintain current hardware and software licenses for IT operational systems.</p> <p>-Maintain an Integrated Service Desk supporting 8,000 MDA users across all locations, resolving over 45,000 help desk tickets per quarter.</p> <p>-Maintain IT life-cycle asset management of over 15,000 end user devices (desktops, laptops, monitors, printers, thin clients, and BlackBerrys).</p> <p>-Fund MDA Chief Information Office (CIO) civilian salaries.</p>			
<p>Title: Unified Communications</p> <p align="right">Articles:</p>	11.517	13.415	14.437
<p>Description: Provides for implementation, operations and maintenance of VTC, wireless and telephony services.</p> <p>FY 2013 Accomplishments:</p> <p>-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).</p> <p>-Operated, monitored, and sustained recurring classified and unclassified telecommunications equipment to comply with DoD policies and Global Information Grid architecture plan.</p> <p>-Operated, monitored, and sustained recurring classified and unclassified wireless services.</p> <p>-Operated, monitored, and sustained recurring operations for agency wide video teleconference rooms and equipment.</p> <p>-Provided and implement engineering solutions for all unified communication services.</p> <p>-Sustained unclassified desktop instant messaging and collaboration capabilities to MDA users.</p> <p>-Funded Chief Information Office (CIO) civilian salaries.</p> <p>FY 2014 Plans:</p> <p>Continue efforts as listed under FY 2013 plans for Unified Communications.</p> <p>FY 2015 Plans:</p> <p>-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).</p>	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -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. 				
<p>Title: Information Assurance/Computer Network Defense</p> <p align="right">Articles:</p> <p>Description: Provides for the certification of IT networks and systems, monitoring and computer emergency response services, and Cybersecurity workforce training. Beginning in FY 2014, 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 FY 2014.</p> <p>FY 2013 Accomplishments:</p> <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. -Ensured MDA mission, test, and administrative systems are operated securely in accordance with DoD Information Assurance Certification and Accreditation policies. -Implemented Information Assurance Vulnerability Assessments and Communication Tasking Orders remediation and patches. -Prepared and maintain current certification and accreditation documentation for general service networks reported to DoD and Office of Management and Budget. -Managed data-at-rest encryption to ensure compliance with Global Information Grid mandated policies. -Revised and updated Information Assurance certification and accreditation packages for system level Ballistic Missile Defense Systems reported to DoD and Office of Management and Budget. -Funded recurring hardware maintenance and software licenses for Information Assurance (IA) monitoring systems. -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 DoD mandated annual Information Assurance user training for the MDA workforce. 		14.581 -	- -	- -

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Provided Information Assurance engineering and planning guidance and vulnerability assessment for all MDA Information Technology acquisition programs.</p> <p>-Funded MDA Chief Information Office (CIO) civilian salaries.</p> <p>FY 2014 Plans: See PE 0603890C MC30 Cyber Operations for FY 2014 Base Plans</p> <p>FY 2015 Plans: See PE 0603890C MC30 Cyber Operations for FY 2015 Base Plans</p>				
<p>Title: Business Automation Services</p> <p align="right">Articles:</p>		5.486	5.876	6.732
<p>Description: Provides for the implementation, operations and maintenance of business specific applications.</p> <p>FY 2013 Accomplishments:</p> <p>-Sustained an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment.</p> <p>-Sustained portal-based Learning Management System.</p> <p>-Hosted and provided 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>-Provided server administration hosting licensing and management.</p> <p>-Maintained Integrated Access Control System and Diamond II badge system.</p> <p>-Maintained 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>-Funded 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>FY 2015 Plans:</p> <p>-Sustain an MDA community cloud to host and sustain business applications, storage administration, hosting and operations and maintenance of the virtual environment.</p> <p>-Sustain portal-based Learning Management System</p>		-	-	-

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<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>Title: Portal and Data Services</p> <p align="right">Articles:</p> <p>Description: Provides for the implementation, operations and maintenance of Portal, digital records and data archiving functions.</p> <p>FY 2013 Accomplishments:</p> <p>-Sustained 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>-Maintained a MDA Privacy Office, conducted privacy impact surveys and completed Civil Liberties compliance reporting.</p> <p>-Maintained compliance with Section 508 of the Rehabilitation Act to ensure electronic information technology is accessible to persons with disabilities.</p> <p>-Sustained the Ballistic Missile Defense System (BMDS) Integrated Master Schedule and the Ballistic Missile Defense (BMD) Asset Management Tool.</p> <p>-Managed a software assessment program and conducted reviews of proposed software applications for DoD compliance.</p> <p>-Sustained a DoD mandated Electronics Records Management system.</p> <p>-Provided MDA web-based training programs for information assurance, business applications, workforce certification, security, and ethics.</p> <p>-Funded MDA Chief Information Office (CIO) civilian salaries.</p> <p>FY 2014 Plans:</p> <p>Continue efforts as listed under FY 2013 plans for Portal and Data Services.</p> <p>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).</p> <p>FY 2015 Plans:</p>		8.155	5.313	5.778
		-	-	-

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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 508 of 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> <p>-Fund MDA Chief Information Office (CIO) civilian salaries.</p>			
<p>Title: Network and Infrastructure Services</p> <p align="right">Articles:</p> <p>Description: Provides for the implementation, operations, maintenance and Communications Security (COMSEC) for the MDA UNET/CNET. Real-world issues and the global demand for the Missile Defense Agency (MDA) BMDS capabilities is increasing the demand for more complex information technology products and highly specialized IT services.</p> <p>FY 2013 Accomplishments:</p> <p>-Sustained 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</p> <p>-Sustained 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</p> <p>-Architected and developed plans to repair general IT service and business systems</p> <p>-Performed network tracking and analysis and reported metrics on equipment lifecycle and average time to repair</p> <p>-Planned, engineered and implemented sustainment projects for general IT service and business systems</p> <p>-Procured, received, inventoried, and managed IT equipment to include network devices and desktop and laptop computers</p> <p>-Provided Communications Security (COMSEC) operations and maintenance services for over 4,000 COMSEC items</p> <p>-Funded MDA Chief Information Office (CIO) civilian salaries</p> <p>FY 2014 Plans:</p>	19.029 -	24.544 -	21.458 -

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>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.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -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 				
<p>Title: Information Technology (IT) Planning and Solutions</p> <p align="right">Articles:</p> <p>Description: Provides IT engineering support for new requirements analysis, design, planning and implementation of IT solutions. Real-world issues and the global demand for the Missile Defense Agency (MDA) BMDS capabilities is increasing the demand for more complex information technology products and highly specialized IT services.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Supported the MDA CIO Enterprise Architecture Board, Program Management Integration Board, and Change Control Board. -Updated and maintained current Enterprise architecture documentation. -Provided engineering support for change management, configuration management, validation testing and quality assurance. -Managed MDA customer IT requirements planning, engineering and project management. -Supported MDA Command Group IT project planning and documentation. -Maintained asset management of IT equipment in accordance with DoD policies. -Provided planning, budgeting, and management oversight of IT projects. -Ensured 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. 		8.687	10.175	11.722
		-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Funded MDA Chief Information Office (CIO) civilian and matrix civilian salaries.			
<i>FY 2014 Plans:</i> 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.			
<i>FY 2015 Plans:</i> -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.			
Accomplishments/Planned Programs Subtotals	97.258	92.411	97.097

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	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

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

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

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
End User Support - End User Assistance and Advisory Services	C/CPFF	Colsa : AL, AK, CA, CO, HI, NM, VA	0.000	1.650		1.143	Oct 2013	1.368	Oct 2014	-		1.368	Continuing	Continuing	Continuing
End User Support - End User Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, NM, VA	0.000	2.392		3.056	Oct 2013	3.087	Oct 2014	-		3.087	Continuing	Continuing	Continuing
End User Support - End User Civilian Travel	Allot	MDA Civilian Travel : AL, AK, CA, CO, HI, NM, VA	0.000	0.240		0.206	Oct 2013	0.206	Oct 2014	-		0.206	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	5.405		6.030	Oct 2013	6.133	Oct 2014	-		6.133	Continuing	Continuing	Continuing
End User Support - End User IT Licenses	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	5.195		5.748	Oct 2013	5.843	Oct 2014	-		5.843	Continuing	Continuing	Continuing
End User Support - End User Operational Support	C/CPAF	Northrop Grumman : AL, AK, CA, CO, HI, NM, VA	0.000	14.921		16.905	Oct 2013	20.333	Oct 2014	-		20.333	Continuing	Continuing	Continuing
Unified Communications - Leased Communications/Licenses	MIPR	DISA/DREN/IT2S : AL, AK, CA, CO, HI, NM, VA	0.000	4.259		4.648	Oct 2013	4.851	Oct 2014	-		4.851	Continuing	Continuing	Continuing
Unified Communications - Unified Communications	C/CPFF	Colsa : AL, CO, VA	0.000	0.299		0.207	Oct 2013	0.248	Oct 2014	-		0.248	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity					R-1 Program Element (Number/Name)					Project (Number/Name)					
0400 / 4					PE 0603890C / BMD Enabling Programs					MD30 / BMD Information Management Systems					
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Advisory and Assistance Services															
Unified Communications - Unified Communications Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.000	0.963		1.681	Oct 2013	1.081	Oct 2014	-		1.081	Continuing	Continuing	Continuing
Unified Communications - Unified Communications Operational Support	Allot	Northrop Grumman : AL, CO, VA	0.000	0.895		2.190	Oct 2013	2.623	Oct 2014	-		2.623	Continuing	Continuing	Continuing
Unified Communications - Unified Communications VTC Operations Support	C/CPIF	NMR : AL, AK, CO, NM, VA	0.000	5.101		4.689	Oct 2013	5.616	Oct 2014	-		5.616	Continuing	Continuing	Continuing
Unified Communications - Unified Communications WCF	MIPR	DISA : AL, CO, VA	0.000	-		-		0.018	Oct 2014	-		0.018	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense - CND/IA Advisory and Assistance Services	C/CPFF	Torch Technologies : AL, CO, VA	0.000	3.146		-		-		-		-	-	3.146	-
Information Assurance/ Computer Network Defense - CND/IA Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.000	2.739		-		-		-		-	-	2.739	-
Information Assurance/ Computer Network Defense - CND/IA Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	0.912		-		-		-		-	-	0.912	-
Information Assurance/ Computer Network Defense - CND/IA Operational Support	C/FFP	Northrop Grumman : AL, CO, VA	0.000	7.784		-		-		-		-	-	7.784	-
Business Automation Services - Business Automation Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.000	0.149		0.104	Oct 2013	0.124	Oct 2014	-		0.124	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Business Automation Services - Business Automation Civilian Pay/Travel/PCS	Allot	MDA Civilian Pay : AL, CO, VA	0.000	0.711		0.764	Oct 2013	0.772	Oct 2014	-		0.772	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	0.867		0.882	Oct 2013	0.897	Oct 2014	-		0.897	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	3.759		4.106	Oct 2013	4.919	Oct 2014	-		4.919	Continuing	Continuing	Continuing
Business Automation Services - Business Automation Services (FY2013) Business Automation Support	MIPR	CACI : AL, CO, VA	0.000	-		0.020	Oct 2013	0.020	Oct 2014	-		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	0.454		0.207	Oct 2013	0.248	Oct 2014	-		0.248	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Civilian Pay/Travel/PCS	Allot	MDS Civilian Pay : AL, CO, VA	0.000	0.853		0.917	Oct 2013	0.926	Oct 2014	-		0.926	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Licenses and Maintenance	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	2.410		1.515	Oct 2013	1.472	Oct 2014	-		1.472	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational	C/CPAF	Online Subscriptions Services : AL, CO, VA	0.000	0.231		0.392	Oct 2013	0.399	Oct 2014	-		0.399	Continuing	Continuing	Continuing
Portal and Data Services - Portal and Data Services Operational Support	C/FFP	NMR : AL, CO, VA	0.000	4.207		2.282	Oct 2013	2.733	Oct 2014	-		2.733	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and	Allot	MDA Civilian Pay : AL, CO, VA	0.000	0.987		1.223	Oct 2013	1.235	Oct 2014	-		1.235	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Infrastructure Services Civilian Pay/Travel/PCS															
Network and Infrastructure Services - Network and Infrastructure Services Advisory and Assistance Services	C/CPFF	Colsa : AL, CO, VA	0.000	0.897		0.621	Oct 2013	0.744	Oct 2014	-		0.744	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and Infrastructure Services Licenses	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	8.732		14.076	Oct 2013	9.151	Oct 2014	-		9.151	Continuing	Continuing	Continuing
Network and Infrastructure Services - Network and Infrastructure Services Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	8.413		8.624	Oct 2013	10.328	Oct 2014	-		10.328	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	0.905		0.621	Oct 2013	0.744	Oct 2014	-		0.744	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	0.853		0.917	Oct 2013	0.926	Oct 2014	-		0.926	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	2.551		2.552	Oct 2013	2.595	Oct 2014	-		2.595	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - IT Planning and Solutions OMB, OSD, and DOD Compliance Monitoring and Reporting/Contract Deliverable	C/CPFF	Colsa : AL, CO, VA	0.000	0.261		0.249	Oct 2013	0.293	Oct 2014	-		0.293	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Technology (IT) Planning and Solutions - IT Planning and Solutions Operational Support	C/CPAF	Northrop Grumman : AL, CO, VA	0.000	4.117		4.927	Oct 2013	5.902	Oct 2014	-		5.902	Continuing	Continuing	Continuing
Information Technology (IT) Planning and Solutions - MDA Agency Business Operations	Allot	MDA Business Operations : AL, CO, VA	0.000	-		0.909	Oct 2013	1.262	Oct 2014	-		1.262	Continuing	Continuing	Continuing
Subtotal			0.000	97.258		92.411		97.097		-		97.097	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency								Date: March 2014					
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD30 / BMD Information Management Systems					
	Prior Years	FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	97.258		92.411		97.097		-		97.097	-	-	-

Remarks

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	✦	✦	✦	✦	✦																							
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	✦	✦	✦	✦	✦																							
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Revise and Test Contingency Plans for Information Technology Systems	✦	✦	✦	✦	✦																							
Revise and Test Contingency Plans for Information Technology Systems - Follow-On									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	✦	✦	✦	✦	✦																							
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Procure, Implement, and Asset Control for Information Technology Operational Systems	✦	✦	✦	✦	✦																							
Procure, Implement, and Asset Control for Information Technology Operational Systems -Follow-On									✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	✦	✦	✦	✦	✦																							
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	✦	✦	✦	✦	✦																							
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	✦	✦	✦	✦	✦																							
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	✦	✦	✦	✦	✦																							
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	✦	✦	✦	✦	✦																							

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Sustain the Information Technology Infrastructure Across the MDA Enterprise	✦	✦	✦	✦																								
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	✦	✦	✦	✦																								
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On									✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦	✦
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	✦	✦	✦	✦																								
Complete Annual Information Assurance User Training for MDA Workforce	✦	✦	✦	✦																								

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
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	✦	✦	✦	✦																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems	1	2013	1	2014
Manage DoD Mandated Business Applications and Sustain MDA Financial and Contractual Support Systems - Follow-On	2	2014	4	2019
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week	1	2013	1	2014
Operate and Maintain General Information Technology Services 18 hours per day, 6 days per week - Follow-On	2	2014	4	2019
Revise and Test Contingency Plans for Information Technology Systems	1	2013	1	2014
Revise and Test Contingency Plans for Information Technology Systems - Follow-On	2	2014	4	2019
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services	1	2013	1	2014
Operate and Maintain Classified and Unclassified MDA Knowledge Online Services - Follow-On	2	2014	4	2019
Procure, Implement, and Asset Control for Information Technology Operational Systems	1	2013	1	2014
Procure, Implement, and Asset Control for Information Technology Operational Systems -Follow-On	2	2014	4	2019
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce	1	2013	1	2014
Provide 18 hours per day, 6 days per week Network and Helpdesk Services for General Information Technology Services for MDA Workforce - Follow-On	2	2014	4	2019
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise	1	2013	1	2014
Fund Recurring Leased Circuits, Maintenance Agreements and Licenses for MDA Enterprise - Follow-On	2	2014	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD30 / BMD Information Management Systems
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Events	Start		End	
	Quarter	Year	Quarter	Year
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications	1	2013	1	2014
Operate, Monitor and Sustain Recurring Classified and Unclassified Telecommunication Requirements for Unified Communications - Follow-On	2	2014	4	2019
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications	1	2013	1	2014
Operate, Monitor and Sustain Recurring Operations for Video Teleconferencing for Unified Communications Follow-On	2	2014	4	2019
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool	1	2013	1	2014
Sustain the BMDS Integrated Master Schedule and the Ballistic Missile Defense Asset Management Tool - Follow-On	2	2014	4	2019
Sustain the Information Technology Infrastructure Across the MDA Enterprise	1	2013	1	2014
Sustain the Information Technology Infrastructure Across the MDA Enterprise - Follow-On	2	2014	4	2019
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle	1	2013	1	2014
Perform Analysis, Track, and Report Metrics on Equipment Lifecycle - Follow-On	2	2014	4	2019
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

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency			Date: March 2014	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD30 / <i>BMD Information Management Systems</i>		

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	2013	4	2013

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MC30 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC30: <i>Cyber Operations</i>	-	-	14.431	15.452	-	15.452	15.208	17.762	16.322	16.941	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Beginning in FY 2014, Information Assurance/Computer Network Defense content in Budget Project MD30 of Enabling Programs Element 0603890C to a new Cyber Operations Budget Project MC30 in Program Element 0603890C.

The FY 2014 Appropriation implemented a \$3 million cut to Project MC30 Cyber Operations. MDA must continue to apply additional resources to respond to ever increasing cyber threats and to comply with an increasing number of cybersecurity-related Federal Laws, DoD mandates, Policies and Directives.

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.

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.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014		FY 2015
-----------------------------------------------------------------------------------------	----------------	----------------	--	----------------

Title: Information Assurance/Computer Network Defense (IA/CND)	-	14.431		15.452
Articles:	-	-		-

Description: Provides for the certification of Information Technology networks and systems, monitoring and computer emergency response services.

FY 2013 Accomplishments:

See PE 0603890C Project MD30 for FY 2013 plans.

FY 2014 Plans:

- 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.
- 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.
- 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.

FY 2015 Plans:

- 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -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. -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. -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	-	14.431	15.452

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Information Assurance/ Computer Network Defense (IA/CND) - BMDS IA Advisory and Assistance Services	C/CPFF	Booz Allen Hamilton : AL, CO, VA	0.000	-		0.630	Oct 2013	0.641	Oct 2014	-		0.641	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	-		2.737	Oct 2013	2.783	Oct 2014	-		2.783	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Civilian Travel	Allot	MDA Civilian Travel : AL, AK, CA, CO, HI, NM, VA	0.000	-		0.088	Oct 2013	0.105	Oct 2014	-		0.105	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	-		2.064	Oct 2013	2.778	Oct 2014	-		2.778	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Comsec	MIPR	NSA : AL, CO, VA	0.000	-		0.104	Oct 2013	0.105	Oct 2014	-		0.105	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA Operational Support	C/FFP	Northrop Grumman : AL, CO, VA	0.000	-		8.733	Oct 2013	9.040	Oct 2014	-		9.040	Continuing	Continuing	Continuing
Information Assurance/ Computer Network Defense (IA/CND) - CND/ IA WCF	MIPR	DISA : AL, CO, VA	0.000	-		0.075		-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	-		14.431		15.452		-		15.452	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	14.431	15.452	-	15.452	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command				✦																								
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
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				✦																								
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 - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs				✦																								
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance				✦																								

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems					✦																							
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Complete Annual Information Assurance user Training for MDA Workforce					✦																							
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services					✦																							
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On					✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC30 / Cyber Operations

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	1	2014
Report Vulnerability and Cyber Warfare Attack Metrics to the MDA Chief Information Officer, MDA Leadership, and Cyber Command - Follow-On	2	2014	4	2019
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	1	2014
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 - Follow-On	2	2014	4	2019
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs	1	2014	1	2014
Provide Information Assurance Engineering and Planning Guidance and Vulnerability Assessment for Information Technology Acquisition Programs - Follow-On	2	2014	4	2019
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance	1	2014	1	2014
Procure, Implement, and Asset Control of Hardware maintenance and Software Licenses for Monitoring Systems of Information Assurance - Follow-On	2	2014	4	2019
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems	1	2014	1	2014
Conduct Information Assurance Certification Evaluation of Mission, Test, and Administrative Systems - Follow-On	2	2014	4	2019
Complete Annual Information Assurance user Training for MDA Workforce	1	2014	1	2014
Complete Annual Information Assurance user Training for MDA Workforce - Follow-On	2	2014	4	2019
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services	1	2014	1	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MC30 / <i>Cyber Operations</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Implement Information Assurance Vulnerability Alert Control Improvements for General Information Technology Services - Follow-On	2	2014	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD31 / Modeling & Simulation			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD31: <i>Modeling & Simulation</i>	204.991	40.832	41.188	41.957	-	41.957	44.489	46.323	50.274	51.262	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

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 Ballistic Missile Defense (BMDS) acquisition, 2) to support BMDS Flight and Ground Test execution, 3) to drive MDA test activities to collect data for use in anchoring M&S, and 4) support warfighter training and tactics validation.

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 and constructive 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 development, 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.

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, MDA's M&S program provides a cost effective means to assess and explore the performance space of the BMDS beyond what can be physically tested under current test range conditions and within the Agency's fiscal constraints. 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 DoD, Joint Staff, Military Services, Combatant Commands (COCOMS), Operational Test Agencies (OTAs), MDA Program Elements, and the Intelligence Community.

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

- Ensure that future M&S architectures are composable and flexible, and simplify the integration process to conserve resources and improve capabilities.
- Ensure that future M&S architectures incorporate and require the use of consistent "truth" representations (environmental factors, threat simulations, etc.).
- Improve cross-organizational system engineering processes to optimize requirements generation and ensure the inclusion of all stakeholders.
- Develop refined M&S accreditation criteria between MDA and Operational Test Agency (OTA).

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

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD31 / <i>Modeling & Simulation</i>
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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.

Execution of the M&S mission requires reliance on and operation of two simulation frameworks which, when combined to meet specific M&S intended uses 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 or constructive environment. The final integrated architecture 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. The OSF will host all simulated activities, events, scenarios, and Element and Threat models. MDA will use the end-to-end M&S system representation to conduct BMDS ground tests, Digital Performance Assessments, component training, Wargames, Flight Tests analysis (both pre-mission and post-mission), threat analysis, international event simulations, and to support COCOM exercises.

The Core Truth Modeling program provides consistent and common Phenomenology, Lethality, and Environment models, 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 Threat Modeling Center (TMC) uses all-source intelligence products to produce credible, high resolution threat models and simulation media to support the defense of the United States, deployed forces, and allies against ballistic missile attacks. The threat models are used to produce accurate kinematic threat trajectories and signature data (radar cross-section (RCS), hardbody infrared (IR), and IR plume) of both ballistic missiles and air breathing threats to drive the M&S tools of the missile defense community, and 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, Digital Performance Assessment, Warfighter training/exercises) to prove the performance of the BMDS. These threat representations are derived from information provided by the Intelligence Community, as well as MDA's Adversary Capability Documents (ACDs) and Adversary Data Packages (ADPs).

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 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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MDA's 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 2013	FY 2014	FY 2015
<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) development, testing, and assessment.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Continued implementation of the final Transition Plan for retirement of the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) frameworks, and assessed readiness for a phased Objective Simulation Framework (OSF) introduction into M&S venues. - Provided integrated Verification, Validation & Accreditation (VV&A) of MDA M&S at the system level for Technical Assessments, Performance Assessments, Ground Tests that support BMDS fielding decisions, and tier one Combatant Command (COCOM) exercises in accordance with events planned per the approved Integrated Master Test Plan (IMTP). - Began OSF 1.0.1 capability assessment at the BMDS Integration and Development (BID) Lab to assess maturity of capabilities and ability to drive HWIL elements using GT-04 interfaces. - Supported Technical Interchange Meetings with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project Arrangement. <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, 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 continued M&S technical interchange with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project Arrangement. - 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 2, Homeland Defense and Regional Phased Adaptive Approach). 	7.545	7.617	7.893
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Implement the Transition Plan to replace the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) with an Objective Simulation Framework (OSF) to support M&S Intended Uses.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Maintain and update MDA's M&S model capability descriptions 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, Digital simulations, 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 continued M&S technical interchange with the Department of Defense of Australia under the Ballistic Missile Defense Modeling, Simulation and Analysis Project Arrangement. - 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) and Homeland Defense). - Continue the transition to replace the Digital Simulation Architecture (DSA) and Single Stimulation Framework (SSF) with an Objective Simulation Framework (OSF) to support M&S Intended Uses. 			
<p>Title: M&S Digital Framework, Simulation, Models</p> <p align="right">Articles:</p> <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, Warfighter events, and BMD International Simulation events.</p> <p>FY 2013 Accomplishments:</p> <p>Development:</p> <ul style="list-style-type: none"> - Began migration of Single Stimulation Framework (SSF) into the Objective Simulation Framework (OSF). - Continued requirements management for product development activities (e.g., Element Model integration into OSF's standards-based open architecture). - Conducted the Preliminary Design Review and Critical Design Review for v3.1 of the PATRIOT System Effectiveness Model (PSEM). <p>Sustainment:</p> <ul style="list-style-type: none"> - Sustained the BMD International Simulation (I-SIM) in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations. BMD I-SIM supported the BMD 2013 Wargame, Keen Sword Exercise, and the Nimble Titan Campaign. 	14.090	14.190	10.943
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Sustained Discrete Event Simulation (DESIM) in support of COCOM events.</p> <p>- Sustained the Missile Defense Space Warning Tool (MDST) in support of Warfighter events. MDST supported 141 Warfighter exercises and training events simulating 59,287 missile launches with a 100% success rate.</p> <p>- Sustained and delivered major releases of M&S digital products in support of MDA's Phased Adaptive Approach.</p> <p>Phase I/II Performance Assessment associated events:</p> <p>- Provided software support for PATRIOT System Effectiveness Model (PSEM) for use in MDA activities.</p> <p>- Maintained the BMDS Discrete Event Simulation (DESIM) 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 v8.2 development.</p> <p>- Provided 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>- Integrated, tested, functionally qualified, and delivered end to end BMDS simulations supporting various events (utilizing Missile Defense Space Tool and Element-provided medium/high-resolution models) to support full-envelope BMDS performance assessments:</p> <p>-- PSEM in support of GTI-04e Part 1, GTI-04e Part 1a, and FTI-01 SPFR.</p> <p>-- EADSIM in support of JPOW 13, UFG13, and GDEX-04e.</p> <p>- Initiated and continued integration and testing of end-to-end BMDS simulations supporting various events (utilizing Missile Defense Space Tool (MDST) and Element-provided medium/high-resolution models)</p> <p>-- 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.</p> <p>-- Controlled and maintained Performance Assessment Simulation ensembles in support of M&S development, Integration, and events in the Simulation Execution Center (SEC) in Colorado Springs, CO.</p> <p>- Planned, prepared and executed BMDS Model & Simulation Events to include System Post Flight Reconstruction events to support Model Validation of the Hardware-in-the-Loop (HWIL).</p> <p>- Provided 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: Development and Sustainment:</p>			

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD31 / <i>Modeling & Simulation</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Develop and sustain MDA's BMD International Simulation (I-SIM) in support of Combatant Commander (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations. - Develop and sustain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS OPIR architectures in support of Warfighter events. - 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. - Provide software development/sustainment for BMDS component models of PATRIOT weapons system for use in MDA test and validation events. <p>Maintenance:</p> <ul style="list-style-type: none"> - Maintain Discrete Event Simulation (DESIM) in support of COCOM events and initiate a study of replacement options with existing M&S tools. <p>Event Integration/Support Operations:</p> <ul style="list-style-type: none"> - Integrate, test, functionally qualify and deliver legacy M&S tools for use in MDA test events and exercises, to include models for PATRIOT, SBIRS, JTAGS, communications. <ul style="list-style-type: none"> - Begin the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support M&S Intended Uses. - Control and maintain simulations 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/Wargames, demonstrations, and Missile Defense Space Warning Tool Operations. - Provide threat representations (kinematic trajectories, RCS, and IR signature data) for use in Real World Events, simulations, exercises, Wargames, and test and evaluation activities across the DoD. <p>FY 2015 Plans:</p> <p>Development and Sustainment:</p> <ul style="list-style-type: none"> - Initiate the re-architecting of MDA's BMD International Simulation (I-SIM) to adapt to growing distributed event requirements in support of Combatant Command (COCOM) and International Wargames, conceptual planning, BMD visualizations, BMD training/orientation, and M&S demonstrations. - Develop and sustain the Missile Defense Space Warning Tool (MDST) to keep pace with fielded BMDS OPIR Architectures in support of Warfighter events. - 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. - Provide Software development/sustainment for BMDS component models of PATRIOT weapon system for use in MDA test and validation events. 			
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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Maintenance:
- Replace Discrete Event Simulation (DESIM) with existing modernized M&S tools in support of COCOM events.

Event Integration/Support Operations:
- Integrate, test, functionally qualify, and deliver legacy M&S tools for use in MDA test events, Wargames, and exercises (includes models for PATRIOT, SBIRS, JTAGS, communications).

- Continue the transition of real-time digital simulation capability to the Objective Simulation Framework (OSF) to support Intended Uses.
- Control and maintain simulations 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/Wargames and demonstrations as well as Missile Defense Space Warning Tool operations
- Provide threat representations (kinematic trajectories, RCS, and IR signature data) for use in real-world events, simulations, exercises, wargames, and test and evaluation activities across the DoD.
- Perform operational planning for the FY2016 BMDS assessment events.

FY 2015 decrease reflects reprioritization of efforts to achieve M&S Hardware-in-the-Loop (HWIL) requirements, as described below.

Title: M&S HWIL Framework, Simulations, Models	9.341	9.431	12.633
Articles:	-	-	-

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.

FY 2013 Accomplishments:
Development:
- Initiated migration of Hardware-in-the-Loop (HWIL) functionality into the Objective Simulation Framework (OSF).
- Continued requirements management for product development activities (e.g., OSF).

Sustainment:

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Provided sustainment, maintenance and product support of BMDS HWIL stimulation framework-- the Single Stimulation Framework (SSF) for Elements integration, BMDS ground, flight tests and training and supported MDA CONUS and host nation exercises.</p> <p>- Provided sustainment, maintenance and product support of BDMS HWIL SSF to support Ground Base Mid-Course and BMDS Sensors Directorates' stand-alone training and the Distributed Multi-Echelon Training System (DMETS) capability.</p> <p>- Sustained SSF framework capabilities for GM and SN element framework for Pre-Mission Test (PMT) test support, Countdown training and post flight reconstruction (PFR).</p> <p>- Sustained SSF support to BMDS PMT and PFR activities.</p> <p>- Provided concepts for initial SSF/OSF Open Architecture redesign capabilities.</p> <p>Event Integration/Support Operations:</p> <p>- Continued incremental deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allies to modernize SSF Interface Unit (SIU) fleet and minimize obsolescence.</p> <p>- Continued integration of Optimistic Sensor Model (OSM), Extended Air Defense Simulation (EADSIM), and Missile Defense Space Warning Tool (MDST) with the SSF.</p> <p>- Integrated the BMDS HWIL SSF with additional MDA and non-MDA Elements as they were integrated into the BMDS architecture.</p> <p>- Implemented improved Instantaneous Object Processing capabilities in BMDS Ground tests.</p> <p>- Removed all support for the Missile Defense System Exerciser (MDSE) framework and integrated all MDSE mission requirements into SSF contracts and plans for future Objective Simulation Framework (OSF) integration.</p> <p>- Defined transition plan from SSF contracts to OSF contracts for BMDS ground test and Warfighter Intended Use.</p> <p>- Planned the integration of SSF with Upgraded Early Warning Radar (UEWR) Clear Air Force Station.</p> <p>FY 2014 Plans:</p> <p>- Deliver the Objective Simulation Framework (OSF) Version 2.0 to begin the transition of Hardware-in-the-loop (HWIL) capabilities.</p> <p>- Deliver improved debris and phenomenology modeling capabilities to support BMDS Phased Adaptive Approach (PAA) Phase 3 and beyond needs.</p> <p>- 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 3 and beyond needs.</p> <p>- Control and maintain the HWIL Integration Laboratory for Element M&S in Huntsville, AL.</p> <p>- 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> <p>FY 2015 Plans:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Deliver the Objective Simulation Framework (OSF) to complete the transition of Hardware-in-the-loop (HWIL) capabilities. - 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 needs. - Control and maintain the HWIL Integration Laboratory for Element M&S in Huntsville, AL. - Provide support for scheduled events including Wargames and COCOM Exercises and the Distributed, Focused and Integrated Ground Test Events as presented in the Integrated Master Test Plan (IMTP). - Develop, maintain, test, field, and operate model representations for use in Ground Tests. <p>FY 2015 increase reflects reprioritization of M&S efforts to achieve M&S Hardware-in-the-Loop (HWIL) requirements.</p>			
<p>Title: M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication)</p> <p align="right">Articles:</p>	9.856	9.950	10.488
<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 Ground Test Events and Wargaming Exercises. The Core Truth Model efforts are critical in the assessment of all BMDS capability deliveries.</p> <p>FY 2013 Accomplishments:</p> <p>Development:</p> <ul style="list-style-type: none"> - Conducted requirements management for product development activities (e.g., Objective Simulation Framework (OSF)). - Developed capabilities-based and intelligence-credible missile models based on the MDA Threat Systems Engineer specifications. - Initiated 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. - Achieved accreditation of the Parametric Endo/Exo-atmospheric Lethality Simulation (PEELS) for OTA post-flight test assessment of FTO-01. - Generated and delivered KIDD target inputs and COD databases for FTO-01, GTI-04e Part 1, and GTI-04e Part 1a. - Utilized PEELS for assessment of FTG-06b, PDB-7 LUT, and FTO-01 - Utilized PEELS for shotline selection analysis for PAC-3 MSE LFT&E planning. <p>Sustainment:</p>	-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Conducted 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)).</p> <p>- 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)).</p> <p>- Enhanced 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.</p> <p>- Provided 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.</p> <p>- Provided 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.</p> <p>- Initiated Systems Engineering efforts to support integration of all applicable Core Truth Model functions into Objective Simulation Framework (OSF) framework.</p> <p>- Produced threat trajectory and signature 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, Flight Tests, Wargames, exercises, Distributed Multi-Echelon Training System (DMETS) events, and MDA engineering studies.</p> <p>- Produced Threat Generator External (TGx), a desk tool designed for analysts to generate their own engineering trajectories, and provided this to over 150 users including OSD Cost Assessment and Program Evaluation (CAPE), Joint Integrated Air and Missile Defense Organization (JIAMDO), Ballistic Missile Defense System Operational Test Agency, Service Operational Test Agencies, and Warfighters.</p> <p>FY 2014 Plans:</p> <p>-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 3 and beyond.</p> <p>-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.</p> <p>-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 enable threat production for real-world events; BMDS development, system-level events, and exercise; and Wargames.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Provide M&S software for the Threat Generator External (TGx) analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) for threat studies throughout the DoD. -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 2015 Plans: -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). -Maintain legacy truth representations (e.g., Parametric Endoatmospheric-Exoatmospheric Lethality Simulation (PEELS), Kinetic Intercept Debris Distribution (KIDD) and 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 enable threat production for real-world events; BMDS development, system-level events, and exercises; and Wargames. -Provide M&S software for the Threat Generator External (TGx) analyst/planner tool (e.g. integration of new/updated missile models and threat system capabilities) for threat studies throughout the DoD. -Continue efforts to support integration of all applicable Core Truth Model functions into Objective Simulation Framework (OSF) framework. -Provide support for scheduled events including Wargames, Exercises, and the Distributed, Focused and Integrated Ground Test Events as presented in the IMTP. - Deliver Core Truth Models (CTM) Toolkit for integrated truth representations across the M&S enterprise.			
Accomplishments/Planned Programs Subtotals	40.832	41.188	41.957

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603881C: Ballistic Missile	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
<i>Defense Terminal Defense Segment</i>											
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603892C: AEGIS BMD	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing

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

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

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Configuration & Risk Management	C/FFP	ManTech : CO	6.009	-		-		-		-		-	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Integrated Master Plan	C/FFP	ManTech : CO	3.879	-		-		-		-		-	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - M&S Reqts & Design- Product Capability Documents	C/FFP	Boeing : AL	15.002	2.469		-		-		-		-	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Design - CSS	C/CPAF	Northrop Grumman : CO	0.000	3.274		3.758	Oct 2013	3.000	Oct 2014	-		3.000	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Design Support	Various	MDA : CO, AL	0.000	1.802		1.926	Oct 2013	1.259	Oct 2014	-		1.259	Continuing	Continuing	Continuing
Modeling and Simulation (M&S) Requirements, Design Spt, Scenario Optimization - Requirements & Scenario Design Support - OGA	MIPR	AMRDEC : AL	0.000	-		1.933	Oct 2013	3.634	Oct 2014	-		3.634	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S Digital Framework, Simulation, Models - Digital Framework Development	C/CPAF	Northrop Grumman : CO	0.000	-		7.794	Oct 2013	4.957	Oct 2014	-		4.957	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Development / Support	MIPR	SMDC : AL	0.000	-		1.750	Oct 2013	1.800	Oct 2014	-		1.800	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support	Various	MDA : CO, AL	0.000	-		2.006	Nov 2013	0.258	Oct 2014	-		0.258	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S / Digital Framework Support - OGA	MIPR	AMRDEC : AL	0.000	-		2.640	Oct 2013	3.928	Oct 2014	-		3.928	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for International Programs	C/CPAF	Northrop Grumman : CO	37.483	3.436		-		-		-		-	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - M&S Digital Framework - Integrated Capability for Performance Assessment	C/CPAF	Northrop Grumman : CO	42.310	10.654		-		-		-		-	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL - Industry	C/CPAF	Northrop : CO	0.000	2.608		-		-		-		-	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	53.419	-		-		-		-		-	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
M&S HWIL Framework, Simulations, Models - M&S HWIL Framework Development and Support	C/CPFF	Teledyne Brown Engineering : AL, CO	0.000	-		6.315	Oct 2013	4.742	Oct 2014	-		4.742	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Simulations / Models Development	MIPR	AMRDEC : AL	0.000	6.733		2.316	Oct 2013	6.754	Oct 2014	-		6.754	Continuing	Continuing	Continuing
M&S HWIL Framework, Simulations, Models - M&S HWIL Support	Various	MDA : AL, CO	0.000	-		0.800	Oct 2013	1.137	Oct 2014	-		1.137	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - Core Truth Models Validation	Various	Various : CO, AL	0.000	2.635		1.154	Oct 2013	1.281	Oct 2014	-		1.281	Continuing	Continuing	Continuing
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	2.415	0.310		-		-		-		-	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	21.472	3.025		1.759	Oct 2013	2.504	Oct 2014	-		2.504	Continuing	Continuing	Continuing
M&S Core Truth Modeling (formerly Phenomenology, Lethality, Environment, Threat-Communication) - M&S Core Truth Modeling - PLET-C Integration,	C/CPAF	Northrop Grumman : CO	3.376	0.432		-		-		-		-	Continuing	Continuing	Continuing

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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Assembly, Test & Checkout															
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	12.602	1.736		7.037	Oct 2013	6.703	Oct 2014	-		6.703	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	7.024	1.718		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			204.991	40.832		41.188		41.957		-		41.957	-	-	-

Remarks
N/A

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

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	204.991	40.832	41.188	41.957	-	41.957	-	-	-

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Test, Integrated O4e (GTI-O4e) Verification, Validation, and Accreditation 1Q-FY 2013	▲																											
Combatant Command Exercise (Vigilant Shield 13) 1Q-FY 2013	▲																											
Combatant Command Exercise (Global Thunder 13) 2Q-FY 2013			▲																									
Combatant Command Exercise (Terminal Fury 13) 3Q-FY 2013				▲																								
Ground Test, Integrated O4e (GTI-O4e) Developmental Test 3Q-FY 2013				▲																								
Combatant Command Exercise (Global Lightning 13) 3Q-FY 2013				▲																								
Ground Test, Integrated O4 (GTI-O4) Operational Test 3Q-FY 2013				▲																								
Ground Test, Distributed O4e (GTD-O4e) Part 2 1Q-FY2015												△																
Objective Simulation Framework (OSF) v1.0.1 4Q-FY 2013																												
Global Defender (GDEx) 4Q-FY 2013																												
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2014																												
Combatant Command Exercise (Vigilant Shield 14) 1Q-FY 2014																												
Missile Defense Space warning Tool (MDST) v15 System Reqs Review 1Q-FY 2014																												
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014																												
National Missile Defense Conference Wargame 2Q-FY 2014																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014							▲																					
Congressional Wargame 2Q-FY 2014							▲																					
Ground Test, Focused 06 (GTX-06) 3Q-FY 2014								▲																				
International Simulation v8.1 3Q-FY 2014								▲																				
Combatant Command Exercise (Global Lightning 14) 3Q-FY 2014								▲																				
Fast Event 2												▲																
Fast Event 1												▲																
Ground Test, Distributed 04e (GTD-04e Part 2) DT/OT 1Q-FY 2015												▲																
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014								▲																				
Objective Simulation Framework (OSF) v1.0.2 4Q-FY 2014												▲																
Multi-National Missile Defense Conference Wargame 4Q-FY 2014								▲																				
Combatant Command Exercise (Global Thunder 15) 1Q-FY 2015												▲																
International Simulation v.8.2 – 1Q-FY 2015												▲																
Combatant Command Exercise (Vigilant Shield 15) 1Q-FY 2015												▲																
Ground Test, Distributed 04e Part 2 (GTD-04e Part 2) BMDSD Distributed Ground Test 1Q-FY 2015												▲																
Missile Defense Space warning Tool (MDST) v15.2 – 1Q-FY 2015												▲																

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Test, Integrated 06 Part 1 (GTI-06 Part 1) BMDS Integrated HWIL Ground Test 2Q-FY 2015									▲																			
National Missile Defense Conference Wargame 2Q-FY 2015									▲																			
Objective Simulation Framework (OSF) v1.0.3 - 2Q-FY 2015									▲																			
BMDS Wargame 2015 2Q-FY 2015									▲																			
Missile Defense Conference 2015 WG 3Q-FY 2015											▲																	
Global Defender (GDEx06 Part 2) 3Q-FY 2015											▲																	
Combatant Command Exercise (Global Lightning 15) 3Q-FY 2015											▲																	
Combatant Command Exercise (Terminal Fury 15) 3Q-FY 2015											▲																	
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 4Q-FY 2015												▲																
Multi-National Missile Defense Conference Wargame 4Q-FY 2015												▲																
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) BMDS Integrated HWIL Ground Test 4Q-FY 2015												▲																
Ground Test, Distributed 06 Part 1a (GTD-06 Part 1a) 1Q-FY 2016													▲															
Combatant Command Exercise (Vigilant Shield 16) 1Q-FY 2016													▲															
Missile Defense Space warning Tool (MDST) 15.3 - 1Q-FY 2016													▲															
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 1Q-FY 2016													▲															

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Combatant Command Exercise (Global Thunder 16) 1Q-FY 2016													△															
Ground Test, Distributed 06 Part 2 (GTD-06 Part 2) Operational Test 1Q-FY 2016													△															
Objective Simulation Framework (OSF) v1.0.4 - 1Q-FY 2016													△															
International Simulation v.8.3 – 1Q-FY 2016													△															
Warfighter Trial Period -06 Part 2(WFTP-06 Part 2) 2Q-FY 2016														△														
Combatant Command Exercise (Global Lightning 16) 3Q-FY 2016																												
Ground Test, Focused 07a (N/P/E/C) (GTX-07a (N/P/E/C)) 3Q-FY 2016																												
Combatant Command Exercise (Terminal Fury 16) 3Q-FY 2016																												
Objective Simulation Framework (OSF) v1.x - 3Q-FY 2016																												
GDEx 07a 4Q-FY 2016																												
Ground Test, Distributed 07a Part 1 (P) (GTD-7a Part 1 P) Developmental Test 4Q-FY 2016																												
Ground Test, Integrated 07a (GTI-07a) Developmental Test 4Q-FY 2016																												
Ground Test, Distributed 07a Part 1 (P) (GTD-7a Part 1 P) Operational Test 4Q-FY 2016																												
Ground Test, Integrated 07a (GTI-07a) Operational Test 4Q-FY 2016																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground Test, Distributed 07a Part 1 (N/P) (GTD-07a Part 1 (N/P)) Operational Test 1Q-FY 2017																												
Combatant Command Exercise (Global Thunder 17) 1Q-FY 2017																												
Ground Test, Distributed 07a Part 1 (N/E) (GTD-07a Part 1 N/E) Developmental Test 1Q-FY 2017																												
Ground Test, Distributed 07a Part 1 (N/E) (GTD-07a Part 1 N/E) Operational Test 1Q-FY 2017																												
Combatant Command Exercise (Vigilant Shield 17) 1Q-FY 2017																												
International Simulation v 8.4 – 1Q-FY 2017																												
Missile Defense Space warning Tool (MDST) 15.4 - 1Q-FY 2017																												
Ground Test, Distributed 07a Part 1 (N/P) (GTD-07a Part 1 (N/P)) Developmental Test 1Q-FY 2017																												
Ground Test, Distributed 07a Part 2 (E) (GTD-07a Part 2 E) Developmental Test 2Q-FY 2017																												
Ground Test, Distributed 07a Part 2 (E) (GTD-07a Part 2 E) Operational Test 2Q-FY 2017																												
Ground Test, Distributed 07a Part 2 (C) (GTD-07a Part 2 C) Developmental Test 2Q-FY 2017																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Ground test, Distributed 07a Part 2 (C) (GTD-07a Part 2 C) Operational Test 2Q-FY 2017																												
Combatant Command Exercise (Global Lightning 17) 3Q-FY 2017																												
Combatant Command Exercise (Terminal Fury 17) 3Q-FY 2017																												
GDEx 07b Part 1 3Q-FY 2017																												
Combatant Command Exercise (Vigilant Shield 18) 1Q-FY 2018																												
Combatant Command Exercise (Global Thunder 18) 1Q-FY 2018																												
Ground Test, Integrated 07b (GTI-07b) 2Q-FY 2018																												
GDEx 07b Part 2 3Q-FY 2018																												
Performance Assessment (PA07b DT) 3Q-FY 2018																												
Combatant Command Exercise (Terminal Fury 18) 3Q-FY 2018																												
Combatant Command Exercise (Global Lightning 18) 3Q-FY 2018																												
Ground Test, Distributed 07b Part 2 (GTD-07b Part 2) 4Q-FY 2018																												
Ground Test, Distributed 07b Part 1 (GTD-07b Part 1) 4Q-FY 2018																												
Performance Assessment (PA07b OT) 4Q-FY 2018																												
Combatant Command Exercise (Global Thunder 19) 1Q-FY 2019																												
Combatant Command Exercise (Vigilant Shield 19) 1Q-FY 2019																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Combatant Command Exercise (Global Lightning 19) 3Q-FY 2019																																▲
Combatant Command Exercise (Terminal Fury 19) 3Q-FY 2019																																▲
GDEx 08 Part 1 3Q-FY 2019																																▲

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Integrated 04e (GTI-04e) Verification, Validation, and Accreditation 1Q-FY 2013	1	2013	1	2013
Combatant Command Exercise (Vigilant Shield 13) 1Q-FY 2013	1	2013	1	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
Ground Test, Distributed 04e (GTD-04e) Part 2 1Q-FY2015	1	2015	1	2015
Objective Simulation Framework (OSF) v1.0.1 4Q-FY 2013	4	2013	4	2013
Global Defender (GDEx) 4Q-FY 2013	4	2013	4	2013
Single Stimulation Framework (SSF) v1.1.7 4Q-FY 2014	4	2014	4	2014
Combatant Command Exercise (Vigilant Shield 14) 1Q-FY 2014	1	2014	1	2014
Missile Defense Space warning Tool (MDST) v15 System Repts Review 1Q-FY 2014	1	2014	1	2014
Combatant Command Exercise (Global Thunder 14) 1Q-FY 2014	1	2014	1	2014
National Missile Defense Conference Wargame 2Q-FY 2014	2	2014	2	2014
Warfighter Trial Period -04e (WFTP-04e) 2Q-FY 2014	2	2014	2	2014
Congressional Wargame 2Q-FY 2014	2	2014	2	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 (Global Lightning 14) 3Q-FY 2014	3	2014	3	2014
Fast Event 2	4	2014	4	2014
Fast Event 1	4	2014	4	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Distributed 04e (GTD-04e Part 2) DT/OT 1Q-FY 2015	1	2015	1	2015
Combatant Command Exercise (Terminal Fury 14) 3Q-FY 2014	3	2014	3	2014
Objective Simulation Framework (OSF) v1.0.2 4Q-FY 2014	4	2014	4	2014
Multi-National Missile Defense Conference Wargame 4Q-FY 2014	4	2014	4	2014
Combatant Command Exercise (Global Thunder 15) 1Q-FY 2015	1	2015	1	2015
International Simulation v.8.2 – 1Q-FY 2015	1	2015	1	2015
Combatant Command Exercise (Vigilant Shield 15) 1Q-FY 2015	1	2015	1	2015
Ground Test, Distributed 04e Part 2 (GTD-04e Part 2) BMDS Distributed Ground Test 1Q-FY 2015	1	2015	1	2015
Missile Defense Space warning Tool (MDST) v15.2 - 1Q-FY 2015	1	2015	1	2015
Ground Test, Integrated 06 Part 1 (GTI-06 Part 1) BMDS Integrated HWIL Ground Test 2Q-FY 2015	2	2015	2	2015
National Missile Defense Conference Wargame 2Q-FY 2015	2	2015	2	2015
Objective Simulation Framework (OSF) v1.0.3 - 2Q-FY 2015	2	2015	2	2015
BMDS Wargame 2015 2Q-FY 2015	2	2015	2	2015
Missile Defense Conference 2015 WG 3Q-FY 2015	3	2015	3	2015
Global Defender (GDEx06 Part 2) 3Q-FY 2015	3	2015	3	2015
Combatant Command Exercise (Global Lightning 15) 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) Operational Test 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) BMDS Integrated HWIL Ground Test 4Q-FY 2015	4	2015	4	2015
Ground Test, Distributed 06 Part 1a (GTD-06 Part 1a) 1Q-FY 2016	1	2016	1	2016
Combatant Command Exercise (Vigilant Shield 16) 1Q-FY 2016	1	2016	1	2016
Missile Defense Space warning Tool (MDST) 15.3 - 1Q-FY 2016	1	2016	1	2016
Ground Test, Integrated 06 Part 2 (GTI-06 Part 2) Operational Test 1Q-FY 2016	1	2016	1	2016

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Events	Start		End	
	Quarter	Year	Quarter	Year
Combatant Command Exercise (Global Thunder 16) 1Q-FY 2016	1	2016	1	2016
Ground Test, Distributed 06 Part 2 (GTD-06 Part 2) Operational Test 1Q-FY 2016	1	2016	1	2016
Objective Simulation Framework (OSF) v1.0.4 - 1Q-FY 2016	1	2016	1	2016
International Simulation v.8.3 – 1Q-FY 2016	1	2016	1	2016
Warfighter Trial Period -06 Part 2(WFTP-06 Part 2) 2Q-FY 2016	2	2016	2	2016
Combatant Command Exercise (Global Lightning 16) 3Q-FY 2016	3	2016	3	2016
Ground Test, Focused 07a (N/P/E/C) (GTX-07a (N/P/E/C)) 3Q-FY 2016	3	2016	3	2016
Combatant Command Exercise (Terminal Fury 16) 3Q-FY 2016	3	2016	3	2016
Objective Simulation Framework (OSF) v1.x - 3Q-FY 2016	3	2016	3	2016
GDEx 07a 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, Integrated 07a (GTI-07a) 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, Distributed 07a Part 1 (N/P) (GTD-07a Part 1 (N/P)) Operational Test 1Q-FY 2017	1	2017	1	2017
Combatant Command Exercise (Global Thunder 17) 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/E) (GTD-07a Part 1 N/E) Operational Test 1Q-FY 2017	1	2017	1	2017
Combatant Command Exercise (Vigilant Shield 17) 1Q-FY 2017	1	2017	1	2017
International Simulation v 8.4 – 1Q-FY 2017	1	2017	1	2017
Missile Defense Space warning Tool (MDST) 15.4 - 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD31 / Modeling & Simulation
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Events	Start		End	
	Quarter	Year	Quarter	Year
Ground Test, Distributed 07a Part 2 (E) (GTD-07a Part 2 E) 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
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 (C) (GTD-07a Part 2 C) Operational Test 2Q-FY 2017	2	2017	2	2017
Combatant Command Exercise (Global Lightning 17) 3Q-FY 2017	3	2017	3	2017
Combatant Command Exercise (Terminal Fury 17) 3Q-FY 2017	3	2017	3	2017
GDEx 07b Part 1 3Q-FY 2017	3	2017	3	2017
Combatant Command Exercise (Vigilant Shield 18) 1Q-FY 2018	1	2018	1	2018
Combatant Command Exercise (Global Thunder 18) 1Q-FY 2018	1	2018	1	2018
Ground Test, Integrated 07b (GTI-07b) 2Q-FY 2018	2	2018	2	2018
GDEx 07b Part 2 3Q-FY 2018	3	2018	3	2018
Performance Assessment (PA07b DT) 3Q-FY 2018	3	2018	3	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
Ground Test, Distributed 07b Part 2 (GTD-07b Part 2) 4Q-FY 2018	4	2018	4	2018
Ground Test, Distributed 07b Part 1 (GTD-07b Part 1) 4Q-FY 2018	4	2018	4	2018
Performance Assessment (PA07b OT) 4Q-FY 2018	4	2018	4	2018
Combatant Command Exercise (Global Thunder 19) 1Q-FY 2019	1	2019	1	2019
Combatant Command Exercise (Vigilant Shield 19) 1Q-FY 2019	1	2019	1	2019
Combatant Command Exercise (Global Lightning 19) 3Q-FY 2019	3	2019	3	2019
Combatant Command Exercise (Terminal Fury 19) 3Q-FY 2019	3	2019	3	2019
GDEx 08 Part 1 3Q-FY 2019	3	2019	3	2019

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MC31 / M&S Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC31: M&S Cyber Operations	-	-	-	0.223	-	0.223	0.229	0.234	0.240	0.246	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Project MC31 is a new Defensive Cyber Operations Project established in this Program Element (PE) for PB 2015. Funds were previously reported in Project MD31 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 Enabling M&S mission systems. It maintains the Certification and Accreditation (C&A) data repository, capturing the DIACAP documentation (artifacts, validation results, Information Assurance Risk Assessment results, and Designated Approving Authority (DAA) accreditation decisions) and POA&M on all M&S 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 2013	FY 2014	FY 2015
Title: Network / System Certification and Accreditation (C&A) for Modeling & Simulation (M&S)	-	-	0.223
Articles:	-	-	-
Description: See Mission Description Above.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: N/A			
FY 2015 Plans: - Conduct Cybersecurity/information assurance engineering and architecture planning for Enabling M&S information technology systems.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / M&S Cyber Operations
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Plan and test the information assurance controls for Enabling M&S systems. - Develop Enabling M&S DoD Information Assurance Certification and Accreditation Program (DIACAP) certification and accreditation packages. - Conduct Controls Validation Testing (CVT) of Enabling M&S systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies. - Conduct annual information assurance reviews to assess compliance in implementing and maintaining information assurance controls. 			
Accomplishments/Planned Programs Subtotals	-	-	0.223

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MC31 / M&S Cyber Operations
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) for Modeling & Simulation (M&S) - CSS	C/CPFF	Torch Technologies : CO, AL	0.000	-		-		0.223	Nov 2014	-		0.223	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		0.223		-		0.223	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-	0.223	-	0.223	-	-	-

Remarks
N/A

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD32: <i>Quality, Safety, and Mission Assurance</i>	93.537	28.505	30.115	30.637	-	30.637	31.621	31.541	31.674	32.343	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

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. Quality, Safety, and Assurance provides Subject Matter Experts (SMEs) who attend all technical reviews (i.e. Design, Test, Mission Readiness Reviews, and Failure

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
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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 2013	FY 2014	FY 2015
<p>Title: Quality, Safety & Mission Assurance</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: Quality:</p> <p>Provided Government inspection and process control for flight test operations Performed non-conformance reporting, tracking, and mitigation for all major flight and ground tests Provided non-advocate independent quality oversight/support to Agency operations such as configuration control boards, engineering forums, and material release activities Performed configuration management verification and reconciliation for all major flight and ground test assets</p> <p>Safety:</p> <p>Maintained on-site safety oversight at key suppliers and Government facilities Conducted safety risk assessments per Department of Defense Standards on all test and operational systems to ensure catastrophic risks remain 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:</p> <p>Provided 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 Provided non-advocate technical support to Missile Defense Agency and Program risk boards, configuration control boards, technical interchange meetings and failure review boards Conducted Mission Assurance audits throughout the Missile Defense Agency's supply chain</p>	<p>28.505</p> <p>-</p>	<p>30.115</p> <p>-</p>	<p>30.637</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>Provided in-plant Mission Assurance and Quality Representatives at 23 Mission Critical Suppliers</p> <p>BMDS Safety Officers (BSOs):</p> <p>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 track non-conformance behavior of the operational and flight test systems Performed software and hardware configuration verification along with supporting the Warfighter to asset management Provided safety support for Eastern, Western and Pacific Range activities such as safety training and certification</p> <p>MDA Parts and Materials Program:</p> <p>Enhanced BMDS reliability through the following activities:</p> <p>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 Pursued remedies against counterfeit parts</p> <p>Acquisition Support:</p> <p>Ensured 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 Updated 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. Improved MDA's acquisition strategy through participation in the definition and determination of all award fees</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Technical Assistance to MDA Elements:</p> <p>Performed 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 Provided mission assurance support to major failure review boards to ensure comprehensive mitigation strategies for operational assets are employed Provided 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>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 to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD Initiated and led quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods</p> <p>Safety and Occupational Health:</p> <p>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 2014 Plans: Continuation of FY 2013 plans.</p> <p>-Decrease from FY 2013 to FY 2014 reflects consolidation of like efforts.</p> <p>FY 2015 Plans: Quality:</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>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:</p> <p>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 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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD32 / <i>Quality, Safety, and Mission Assurance</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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> <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 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 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 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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Participate in the Defense Standardization Board to ensure that MDA has an equal voice in the specification and standard requirements used across the DoD Initiate and lead quality, safety, and mission assurance forums to obtain lessons learned and understand/promote new requirements or methods Safety and Occupational Health: 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.			
Accomplishments/Planned Programs Subtotals	28.505	30.115	30.637

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Quality, Safety & Mission Assurance - Agency Safety & Occupational Health	C/CPFF	Various Multi : AL, CO, AK, DC	1.179	0.309		0.291	Oct 2013	0.288	Oct 2014	-		0.288	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Audits & Quality On-site Support	MIPR	NSWC Corona : AL, CA	7.846	3.196		2.500	Oct 2013	3.297	Oct 2014	-		3.297	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Mission Assurance Agency Operations	C/CPFF	AI Solutions : AL	3.745	0.900		0.800	Oct 2013	1.102	Oct 2014	-		1.102	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Quality Support	C/CPFF	AI Solutions : AL	4.004	1.000		1.000	Oct 2013	0.593	Oct 2014	-		0.593	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety	C/CPFF	APT, INC : AL	5.268	1.000		1.000	Oct 2013	1.180	Oct 2014	-		1.180	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - BMDS Safety Officers	MIPR	AMRDEC : AL	2.649	0.400		0.319	Oct 2013	0.330	Oct 2014	-		0.330	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - HQ & Core Management	MIPR	AMRDEC : AL	1.250	0.300		0.300	Oct 2013	0.300	Oct 2014	-		0.300	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - In-Plant Quality Support (MARS)	C/CPFF	Various Multi : AL, AK, AZ, CA, CO, FL,	5.476	1.742		1.815	Oct 2013	1.802	Oct 2014	-		1.802	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
		HI, NJ, MA, MO, MD, UT													
Quality, Safety & Mission Assurance - Independent Readiness Review Team	C/CPFF	AI Solutions : AL	2.537	0.430		0.773	Oct 2013	0.529	Oct 2014	-		0.529	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance Subject Matter Experts	C/CPFF	APT, INC. : AL	4.093	0.812		0.846	Oct 2013	0.839	Oct 2014	-		0.839	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Operations Support	MIPR	Various Multi : AL, CA	2.149	1.327		0.900	Oct 2013	0.233	Oct 2014	-		0.233	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes (PMP) Program	MIPR	Various Multi : AL, CA, IN	4.737	1.528		1.500	Oct 2013	2.400	Oct 2014	-		2.400	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Parts, Materials and Processes - PMP - Program	C/CPFF	APT, INC : AL	2.041	0.300		0.545	Oct 2013	0.559	Oct 2014	-		0.559	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Pedigree & Design Certification - FFRDC	MIPR	Aerospace : AL, CA	9.167	3.200		2.023	Oct 2013	3.239	Oct 2014	-		3.239	Continuing	Continuing	Continuing
Subtotal			56.141	16.444		14.612		16.691		-		16.691	-	-	-

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
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	22.274	9.978		11.877	Oct 2013	11.203	Oct 2014	-		11.203	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support	C/CPFF	MDA QS : AL, DC, VA	4.275	1.034		1.898	Oct 2013	1.500	Oct 2014	-		1.500	Continuing	Continuing	Continuing
Quality, Safety & Mission Assurance - Quality, Safety & Mission Assurance Operations Support (Travel/PCS)	Allot	MDA QS : AL, CO, AK, DC, VA	10.847	1.049		1.728	Oct 2013	1.243	Oct 2014	-		1.243	Continuing	Continuing	Continuing
Subtotal			37.396	12.061		15.503		13.946		-		13.946	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	93.537	28.505	30.115	30.637	-	30.637	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency							Date: March 2014		
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs			Project (Number/Name) MD32 / Quality, Safety, and Mission Assurance			
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 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.

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	51.532	14.740	18.321	23.780	-	23.780	24.221	25.118	34.911	44.312	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	14.740	18.321	23.780
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	14.740	18.321	23.780

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

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / <i>BMD Enabling Programs</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	4.154	0.076		0.644	Mar 2014	0.025	Mar 2015	-		0.025	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations User Services	C/CPAF	Various : Multi: AL, CO, NM, VA, various	0.000	-		-		5.602		-		5.602	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries, Travel, Training	Allot	MDA : AK, AL, CA, CO, VA	32.378	-		-		-		-		-	32.378	64.756	-
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CO, CA, VA	15.000	13.661		17.677	Oct 2013	15.290	Nov 2014	-		15.290	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services MIPRs	MIPR	Various : Multi: AK, AL, CO, CA, HI, MD, VA, NJ, NY, OCONUS	0.000	-		-		0.234		-		0.234	Continuing	Continuing	Continuing
Program Wide Support - FFRDC	C/CPFF	JHU : CA	0.000	-		-		1.067		-		1.067	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance SRM	MIPR	Various : Multi: AL, CA, AL, AK	0.000	-		-		1.562		-		1.562	Continuing	Continuing	Continuing
Program Wide Support - Facilities and maintenance	MIPR	Various; Multi : AK,AL,CA, CO, VA	0.000	1.003		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			51.532	14.740		18.321		23.780		-		23.780	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	51.532	14.740	18.321	23.780	-	23.780	-	-	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603890C / BMD Enabling Programs	Project (Number/Name) MD40 / Program-Wide Support
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks N/A									
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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603891C / <i>Special Programs - MDA</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	287.056	235.272	276.613	310.261	-	310.261	412.408	357.545	329.758	272.234	Continuing	Continuing
MD27: <i>Special Programs</i>	287.056	235.272	276.613	310.261	-	310.261	412.408	357.545	329.758	272.234	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	272.387	286.613	368.556	-	368.556
Current President's Budget	235.272	276.613	310.261	-	310.261
Total Adjustments	-37.115	-10.000	-58.295	-	-58.295
• Congressional General Reductions	-0.346	-			
• Congressional Directed Reductions	-10.000	-10.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.606	-			
• SBIR/STTR Transfer	-3.024	-			
• Other Adjustment	-21.139	-	-58.295	-	-58.295

Change Summary Explanation

FY 2015 reduction of \$58.295 reflects a realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	4,284.432	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
MD09: <i>Aegis BMD</i>	4,239.808	731.847	699.005	756.773	-	756.773	800.557	713.240	630.456	488.962	Continuing	Continuing
MC09: <i>Cyber Operations</i>	-	-	0.260	0.265	-	0.265	0.269	0.273	0.279	0.279	Continuing	Continuing
MT09: <i>Aegis BMD Test</i>	-	166.697	137.352	89.628	-	89.628	50.934	86.295	117.652	120.869	Continuing	Continuing
MX09: <i>Aegis BMD Development Support</i>	4.427	12.094	23.960	28.758	-	28.758	47.911	54.187	59.736	59.797	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	40.197	47.868	49.351	53.784	-	53.784	56.154	57.100	58.555	51.519	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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 missiles 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 multiple targets and improved performance against more sophisticated threats. Besides the two-color IR seeker, the SM-3 Block IB KW divert engine system has been upgraded

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD
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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 KW to intercept.

Deploying FY 2014:

-Aegis BMD 5.0 - Integrates 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 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 4.1 - Brings Aegis 5.0 Capability Upgrade (CU) EXO and ENDO capability back to the Aegis 4.0 computing architecture in FY2016
- 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603892C / <i>AEGIS BMD</i>
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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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	992.407	937.056	987.729	-	987.729
Current President's Budget	958.506	909.928	929.208	-	929.208
Total Adjustments	-33.901	-27.128	-58.521	-	-58.521
• Congressional General Reductions	-1.946	-0.128			
• Congressional Directed Reductions	-	-27.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	56.076	-			
• SBIR/STTR Transfer	-11.847	-			
• Other Adjustment	-76.184	-	-58.521	-	-58.521

Change Summary Explanation

FY 2015 decrease of \$58.5M due to the following:

- \$36.0M was transferred from MD09 to PE 0604881C to provide support in order to increase schedule and performance of the Block IIA development.
- \$22.5M was a decrease in MT09 Aegis Ballistic Missile Defense (BMD) testing due to schedule changes within the Integrated Master Test Plan (IMTP).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD09 / Aegis BMD			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD09: <i>Aegis BMD</i>	4,239.808	731.847	699.005	756.773	-	756.773	800.557	713.240	630.456	488.962	Continuing	Continuing
Quantity of RDT&E Articles	4.000	4.000	1.000	-	-	-	-	-	-	-		

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

Note

N/A

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.
- Aegis BMD 4.1 backfits Aegis 5.0CU capability (ENDO and EXO) into the BMD 4.0 architecture by FY 2016.
- 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 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 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.)

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

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. 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 implementing Sea-Based Terminal Increment I ENDO engagement capabilities and integration of modified SM-2 BLK IV and modified 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 BMD 4.1 builds upon Aegis BMD 4.0 and adds Aegis BMD 5.0CU capability providing EPAA Phase II Exo threat capability increase, SM-3 MAX MIF (Maximum number Missiles In Flight) improvements, Sea-Based Terminal Increment I ENDO engagement capabilities and integration of modified SM-2 BLK IV and modified SM-6 along with multi-mission (AntiAir Warfare (AAW) and BMD) warfare integration and signal processor, and MK 41 Vertical Launch System (VLS) and Mission Planner capabilities

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:

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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- 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).
- 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.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Aegis Ballistic Missile Defense (BMD) 4.X Development</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Updated 4.0 Computer Program Based upon flight test results. - Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Continued Command and Control Processor (C2P)/Common Data Link Monitoring System (CDLMS) V3.7 installations. - Continued deployment of Global Command and Control System Maritime (GCCS-M) 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. - Update 4.0 Computer Program based on testing and warfighter feedback. - Conduct Threat Adaptation Data update. <p>FY 2015 Plans:</p> <p>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> <ul style="list-style-type: none"> - Continue development of BMD 4.1 (backfit of BMD 5.0CU capability into the BMD 4.0 architecture) - Conduct an Engineering Evaluation of BMD 4.1 - Conduct a Test Readiness Review of BMD 4.1 	53.420	106.550	92.481
<p style="text-align: right;">Articles:</p>	-	-	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Decrease to funding levels from FY 2014 to FY 2015 due to Aegis BMD 4.0 continuing toward the end of the development stage and transitioning to fielding.			
<p>Title: Aegis Ballistic Missile Defense (BMD) 5.0 Development</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Conducted testing to verify full functionality of BMD Components. - Completed BMD 5.0 Prime Item Description Specs (PIDS)/Critical Items Description Specs (CIDS) testing. - Completed BMD 5.0 System Level Specification Verification. - Prepared and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule. - Developed Capability Upgrade (CU) to BMD 5.0 - Conducted MRA's <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. <p>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.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -Conduct Aegis Intercept Flight Test as reflected in the IMTP and the Exhibit R-4 schedule -Conduct a Mission Readiness Assessment (MRA) -Conduct an Engineering Assessment (EA) -Conduct Aegis Ashore Intercept Flight Test with Aegis BMD 5.0CU -Conduct Aegis Intercept Flight Test demonstrating Sea Based Terminal (SBT) -Continue development of BMD 4.1 (backfit of BMD 5.0CU capability into the BMD 4.0 architecture) <p>Decrease in funding levels from FY2014 to Fy2015 due to Aegis BMD 5.0 nearing the end of the development stage and transitioning to fielding, and the current phase of program development.</p>	234.085	153.777	114.537
<p>Title: Aegis Ballistic Missile Defense (BMD) 5.1 Development</p> <p align="right">Articles:</p> <p>Description: See Description below.</p>	144.616	212.253	299.164

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p><i>FY 2013 Accomplishments:</i></p> <ul style="list-style-type: none"> - Continued systems engineering and analysis to complete the Aegis BMD 5.1 A-Spec. - Completed preparation for and execute BMD 5.1 System Design Review (SDR) #2 complete SDR #2 data package and conduct Navy Review Team (NRT) review. - Initiated systems engineering and analysis to develop the Aegis BMD 5.1 B1, B2, and B5-Specs - Initiated preparation for the BMD 5.1 PDR. - Continued analysis and systems engineering for development of Aegis BMD 5.1 EoR, and BMDS integration. - Completed system-level performance analysis in preparation for the SCD CDR, using updated surrogate BMD 5.1 AWS data. - Completed analysis and design of AWS/VLS/Missile interfaces and specifications. - Completed Vertical launch system (VLS) systems engineering, analysis, and design activities in support of VLS Preliminary Design Review (PDR). - Prepared for and conducted VLS PDR. - Initiated VLS systems engineering, analysis, and design activities in support of VLS CDR. <p><i>FY 2014 Plans:</i></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><i>FY 2015 Plans:</i></p>			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Continue software development for the BMD 5.1 Standard Missile-3 Cooperative Development Program (SCD) configuration for the SCD Flight Tests. - Complete 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. - Conduct BMD 5.1 Critical Design Review (CDR) complete CDR data package and conduct Navy Review Team (NRT) review. - Commence software development for the BMD 5.1 Tactical Computer Program for the full capability scope. - 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. - Conduct BMD 5.1 VLS Formal Integration and Qualification Testing. <p>Increase in funding levels from FY2014 to FY2015 due to continuing software development to include BMD 5.1 Tactical Computer Program for the full capability scope. Increases also for BMDS Integration as well as development to adapt BMD 5.1 for the Aegis Ashore configuration.</p>			
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Title: Standard Missile-3 (SM-3) Block IB Development	Articles:	139.117	45.449	69.876
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Description: See Description below.

FY 2013 Accomplishments:

- Continued 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.
- Supported Production decisions for Lot #2 and beyond (4Q FY 2013).
- Conducted Aegis BMD Flight Test Mission including SM-3 intercept using Space Tracking and Surveillance System (STSS) as a remote sensor.

FY 2014 Plans:

- Complete IB Threat Update (IBTU) for 5.0 Capability Upgrade (5.0CU) and additional 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.

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.

FY 2015 Plans:

- Complete IB Threat Update (IBTU) for 5.0 Capability Upgrade (5.0CU) and additional threats.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD	
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014
<p>- 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> <p>- Increase in FY2015 due to development of common avionics architecture between SM-3 IB and SM-3 IIA to support Diminishing Manufacturing Sources and Material Shortages (DMSMS) management, and provide long term cost savings in preparation of Foreign Military Sales.</p>			
<p>Title: Fielding - Aegis Weapon System (AWS)</p> <p>Articles:</p>		96.348 4.000	108.400 1.000
<p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Installed one (1) BMD 3.6 shipset. - Procured one (1) BMD 4.0 shipset. - Installed two (2) BMD 4.0 shipsets. - Procured two (2) BMD 5.0 shipsets. - Installed one (1) BMD 5.0 shipset. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Install three (3) Ballistic Missile Defense (BMD) 4.0 shipsets. - Purchase one (1) BMD 5.1 shipset. - Install one (1) BMD 5.0 shipset. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Install three (3) AMOD (Aegis Modernization program) BMD 5.0CU DDGs shipsets inline. - Update BMD 4.0 to 4.1 software for current ships. <p>Decrease from FY2014 to FY2015 is due to hardware and installations transitioning to procurement articles.</p>		7.800	-
<p>Title: SM-3 Manufacturing</p> <p>Articles:</p>		-	-
<p>Description: This activity initiates purchase of SM-3 Block IIA missiles for the purposes of flight testing and delivery to the fleet as operational assets. This activity further initiates the purchase of SM-3 Block IB missiles for the purposes of operational flight testing.</p> <p>FY 2013 Accomplishments:</p>		-	85.801

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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Delivered ten (10) SM-3 Blk-IB missiles.

FY 2014 Plans:
N/A

FY 2015 Plans:
- Begin long lead funding for seventeen (17) SM-3 Block IIA missiles.

Title: Fleet Integration	4.627	5.931	6.463
Articles:	-	-	-

Description: See Description below.

FY 2013 Accomplishments:

- Provided In-service Engineering support to Aegis BMD: Weapon System and (VLS).
- Provided leadership and engineering/technical support to conduct Aegis Combat Systems Assessments.
- Responded to Fleet issues related to Aegis BMD installations, BMD operations and BMD events.
- Provided reach back analytical support to COCOMs for real world operations.
- Provided maintenance and update of Force on Force Modeling and Simulation.

FY 2014 Plans:

- 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.

The FY 2013 to FY 2014 increase is due to an increase in the number of operational SM-3s and BMD capable Ships.

FY 2015 Plans:

- Provide In-service Engineering support to Aegis BMD
- Provide leadership and engineering/technical support to conduct Aegis BMD Combat System Readiness
- Respond to Fleet issues related to Aegis BMD installations, BMD operations and BMD events.
- Provide reach back analytical support to the COCOMs for real world operations
- Provide maintenance and update of Force on Force Modeling and Simulation

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Provide BMD specific training to BMD ships, COCOM/Fleet Staffs; prepare/coordinate training documents for new BMD baselines.			
<p>Title: Modeling & Simulation HWIL Framework, Simulations, Models</p> <p align="right">Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Demonstrated the Single Stimulation Framework (SSF) has incorporated MDSE framework capabilities to support MDA exercises. - Provided SSF support to Post Flight Reconstruction activities. - Continued integration of the SSF with the digital models into the OSF. - Continued Optimistic Sensor Model (OSM), Extended Air Defense Simulation (EADSIM), and Missile Defense Space Warning Tool (MDST) integration with SSF. - Completed SSF Post Intercept Debris (PID) and Chuff Cloud Capability for interface with particular elements. - Provided for SSF sustainment, maintenance and product support. - Integrated the BMDS HWIL SSF with additional MDA and non-MDA Elements, as they are integrated into the BMDS architecture. - Began deployment and integration of BMDS HWIL SSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. - Continued 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). - Demonstrated initial Open Architecture (OA) redesign capabilities. - Demonstrated improved Instantaneous Object Processing capabilities. - Continued OSF development producing a 1.0.1 baseline that is expected to provide GT-04 comparable capabilities. <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). - 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. 	34.616	39.444	40.076
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - 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>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Transition Single Stimulation Framework (SSF) support for Post Flight Reconstruction activities to Objective Simulation Framework (OSF). - Continue Optimistic Sensor Model (OSM) integration into OSF. - Complete integration of the SSF with the DSA into the Objective Simulation Framework (OSF). - Begin OSF sustainment, maintenance and product support for use in activities supporting MDA stakeholders and allies/coalition partners. - Deliver improved debris and phenomenology modeling capabilities to support Aegis future baselines. - Continue deployment and integration of BMDS Hardware-in-the-loop (HWIL) SSF and OSF Objective Hardware for MDA Elements and a Releasable configuration for Allied and Coalition partners. 			
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Title: Systems Engineering & Integration	10.063	10.491	17.888
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Description: See Description below.	Articles: -	-	-
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<p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Continued support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development. - Continued 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. - Continued 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. - Continued to validate that Ballistic Missile Defense System test targets are threat representative. - Continued 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. 			
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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. - Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts. - Conduct extensive analysis of data collected in BMD test events to evaluate BMD operations and performance. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Identify BMDS architecture alternatives that improve the system's performance and are complementary to and interoperable with NATO systems and theaters around the world. - Develop and refine Capability Planning specifications for future BMDS Elements/Components. - Develop functional performance, interface, and design suitability requirements in collaboration with BMDS element engineers to flow-down and allocate requirements to Programs. - Conduct system level performance analyses to support ongoing BMDS Architecture and Systems Engineering efforts. - Respond to Warfighter, COCOM and Other requests for analyses and requests for information; provide analytical support for real-world events. - Conduct non-advocate assessments of BMDS capabilities and limitations prior to capability delivery decisions to determine fielding readiness (including Defense of the Homeland, Defense of Israel and Theater/Regional BMD) - Conduct extensive analysis of data collected in BMD test events to evaluate BMD operations and performance. - FY 2015 increase is due to increased effort to identify and analyze future architecture alternatives for BMDS and Aegis BMD applications, and support assessment of capabilities to support Warfighter analyses and fielding decisions. 			
<p>Title: M&S Digital Framework, Simulation, Models</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Integrated, tested, functionally qualified, and delivered end-to-end BMDS simulations supporting various uses, including Real-time Digital Simulation (utilizing Missile Defense Space Warning Tool (MDST) and Element-provided medium-resolution models) to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaigns. <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 2/3 needs in BMDS Performance Assessment test venues. -Begin the transition of real-time digital simulations to the OSF to support Warfighter Exercises, Warfighter Training, Element spiral development, and Ground Test campaigns. <p>FY 2015 Plans:</p>	<p>Articles:</p> <p>4.459</p> <p>-</p>	<p>4.983</p> <p>-</p>	<p>4.957</p> <p>-</p>

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014		FY 2015
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- Continue 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 Digital Performance Assessments.

Title: BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations)	10.496	11.727		17.730
Articles:	-	-		-

Description: See Description below.

FY 2013 Accomplishments:

- Provided 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.
- Developed integrated Verification, Validation and Accreditation (VV&A) event Plans and Reports for events as reflected in the Integrated Master Test Plan (IMTP).
- Continued to demonstrate initial Open Architecture (OA) redesign capabilities and improved Instantaneous Object Processing capabilities.
- Continued support to the Combat Systems Engineering Development Site (CSEDS) for Aegis BMD system development.

FY 2014 Plans:

- 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.

FY 2015 Plans:

- Conduct verification and validation (V&V) in support of MDA BMD system level accreditation process in support of Ground Test and Performance Assessment events.
- Develop integrated Verification, Validation and Accreditation (VV&A) and V&V event Plans and Reports for events as reflected in the Integrated Master Test Plan (IMTP) and the Exhibit R-4 schedule.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Conduct specified system post-flight reconstructions, element 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 V&V associated with these events as reflected in the IMTP and the Exhibit R-4 schedule.			
- Conduct system-level V&V of threat trajectory and signature end-to-end environmental implementation is consistent and correct communications and architecture behave properly and interoperability is adequately addressed.			
- FY 2015 increase is due to re-categorization of assessment efforts previously reported in budget project MT09.			
Accomplishments/Planned Programs Subtotals	731.847	699.005	756.773

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0604880C: Land Based SM-3 (LBSM3)	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing
• 0604881C: AEGIS SM-3 Block IIA Co-Development	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	1,232.233

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev MD09	MIPR	AEGIS TECHREP : Moorestown, NJ	0.000	0.324		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev MD09 - Crane	MIPR	NSWC Crane : Crane, IN	0.000	0.071		0.314		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev MD09 - PAC	MIPR	SPAWAR PAC : San Diego, CA	0.000	0.170		1.300		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev MD09 - SCSC	MIPR	Wallops Island : VA	0.000	0.751		0.200		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev.	MIPR	NAVSEA : VA	8.239	-		-		-		-		-	-	8.239	-
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - 201112203132279	MIPR	CORONA : CA	0.000	0.659		0.877	Oct 2013	1.398	Oct 2014	-		1.398	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09	MIPR	NSWC/DD : DAHLGREN, VA	63.180	11.948		5.710	Oct 2013	5.490	Oct 2014	-		5.490	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09 -	MIPR	MDA : VA	15.309	-		-		-		-		-	-	15.309	-
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD	MIPR	NSWC/PHD : PT. HUENEME, CA	11.848	1.224		0.522	Oct 2013	1.046	Oct 2014	-		1.046	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
4.0 Dev. - MD09 - 20117142293189															
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09 - 20117142293191	MIPR	JHU/APL/MD : COLUMBIA, MD	21.906	3.968		3.885	Oct 2013	4.144	Oct 2014	-		4.144	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09 - 20117142293195	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	662.743	19.078		24.556	Oct 2013	13.422	Oct 2014	-		13.422	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09 - 20117142293198	SS/CPAF	RAYTHEON/AZ : TUCSON, AZ	1.943	-		44.589	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev. - MD09 Aegis	MIPR	AEGIS BMD : DAHLGREN, VA	71.221	-		-		-		-		-	-	71.221	-
Aegis Ballistic Missile Defense (BMD) 4.X Development - C2BMC Program	MIPR	MDA : VA	0.000	6.150		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09	SS/CPIF	LOCKHEED MARTIN : MOORESTOWN, NJ	518.426	119.031		78.668	Oct 2013	75.156	Oct 2014	-		75.156	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 -	MIPR	MITRE : CECOM	0.665	1.164		1.169	Oct 2013	0.897	Oct 2014	-		0.897	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316263	MIPR	NSWC/DD : DAHLGREN, VA	45.945	18.182		17.612	Oct 2013	8.914	Oct 2014	-		8.914	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316266	MIPR	NSWC/PHD : PT. HUENEME, CA	2.786	1.299		1.315	Oct 2013	1.009	Oct 2014	-		1.009	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316267	MIPR	JHU/APL/MD : COLUMBIA, MD	27.343	7.010		15.681	Oct 2013	8.199	Oct 2014	-		8.199	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316272	C/CPAF	RAYTHEON/AZ : TUCSON, AZ	0.030	-		0.875	Oct 2013	0.672	Oct 2014	-		0.672	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316275	SS/CPAF	RAYTHEON/AZ : TUCSON, AZ	4.000	-		-		-		-		-	-	4.000	-
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278	MIPR	AEGIS BMD : AZ, VA, CA	0.000	1.848		1.273	Oct 2013	0.977	Oct 2014	-		0.977	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142316278 - 2012628495024	MIPR	NSWC : CRANE	0.000	-		0.612	Oct 2013	0.470	Oct 2014	-		0.470	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - Aegis	MIPR	Aegis BMD : VA	44.594	-		1.075	Oct 2013	0.825	Oct 2014	-		0.825	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - Development Test	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.000	21.169		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - LM	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.000	24.600		-		-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 5.1 Development - BMD 5.1 Development - MD09	MIPR	NSWC/CO : CA	0.000	3.737		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - BMD 5.1 Development - MD09 LM	MIPR	Lockheed Martin : MD	0.000	8.633		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - BMD 5.1 Development MD09	MIPR	Various : MA, MD, VA, NJ	0.000	2.022		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - C2BMC ADNS III	MIPR	Aegis BMD : VA	0.000	6.150		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09	MIPR	AEGIS BMD : AZ, VA, CA	54.407	-		2.465	Nov 2013	3.046	Nov 2014	-		3.046	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323679	MIPR	MDA : VA	22.088	-		2.864	Nov 2013	3.539	Nov 2014	-		3.539	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323680	MIPR	NSWC/DD : DAHLGREN, VA	30.519	4.683		8.143	Oct 2013	10.061	Oct 2014	-		10.061	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323684	MIPR	NSWC/PHD : PT HUENEME, CA	1.049	0.530		1.025	Nov 2013	1.266	Nov 2014	-		1.266	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323686	MIPR	JHU/APL/MD : COLUMBIA, MD	25.444	5.430		9.929	Oct 2013	12.267	Oct 2014	-		12.267	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323689	SS/CPAF	LOCKHEED MARTIN : MOORESTOWN, NJ	159.136	84.653		123.290	Oct 2013	223.003	Oct 2014	-		223.003	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142323691	SS/CPAF	RAYTHEON/AZ : TUCSON, AZ	0.210	-		4.326	Oct 2013	33.295	Oct 2014	-		33.295	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20126284501509	MIPR	SPAWAR : CA	2.629	4.200		4.956	Nov 2013	6.123	Nov 2014	-		6.123	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09	SS/CPAF	Raytheon : Tucson, AZ	879.144	95.372		20.690	Oct 2013	48.059	Oct 2014	-		48.059	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332255	MIPR	NSWC/DD : Dahlgren, VA	32.800	2.969		1.795	Oct 2013	2.351	Oct 2014	-		2.351	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332256	MIPR	JHU/APL/MD : Columbia, MD	35.638	8.593		5.628	Oct 2013	5.170	Oct 2014	-		5.170	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332259	MIPR	NSWC/PHD : Port Huneme, CA	11.129	2.019		0.356	Oct 2013	1.880	Oct 2014	-		1.880	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142332261	MIPR	NSWC Carderock : MD	15.610	1.507		1.278	Oct 2013	0.940	Oct 2014	-		0.940	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - AFMETCAL	MIPR	AFMETCAL : Heath, OH	0.000	0.880		1.800		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - AFRL	MIPR	AFRL : Edward AFB, CA	0.000	0.273		1.200		-		-		-	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Standard Missile-3 (SM-3) Block IB Development - MD09 - China Lake	MIPR	NAWC : China Lake, CA	0.000	1.568		1.300		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Corona	MIPR	NSWC Corona : Corona, CA	0.000	0.579		-		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Indian Head	MIPR	NSWC Indian Head : Indian Head, MD	0.000	0.806		0.778		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - NSA	MIPR	NSA : MD	0.000	0.180		-		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - Oak Ridge National Laboratory	MIPR	Oak Ridge National Laboratory : Oak Ridge, TN	0.000	0.017		-		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - SMC	MIPR	Space Missile Command : El Segundo, CA	0.000	0.161		0.096		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - USTRANSCOM	MIPR	USTRANSCOM : Scott Air Force Base Illinois	0.000	-		0.064		-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 Crane	MIPR	NSWC Crane : Crane, IN	0.000	0.548		0.647		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - MD09 - SWRMC	MIPR	SWRMC : San Diego, CA	0.000	-		8.000		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment	MIPR	MDA : Arlington Va	0.000	-		0.846	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and	MIPR	Norfolk Ship Support : Norfolk, VA	0.000	8.475		7.000		-		-		-	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Deployment - Norfolk Ship Support															
Fielding - Aegis Weapon System (AWS) - Production and Deployment NSWCD	MIPR	NSWC CD : Philadelphia, PA	0.000	0.210		0.524		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - Aegis Tech	MIPR	AEGIS TECHREP : Moorestown, NJ	3.300	0.304		0.319	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - Crane	MIPR	NSWC Crane : Crane, IN	0.000	1.600		0.897		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - Dahlgren	MIPR	NSWC/DD : Dahlgren, VA	26.427	6.587		2.135	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - E CPFF	C/CPFF	Various : Dahlgren, VA	0.000	0.608		-		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - Ingalls	MIPR	Ingalls Planning Yard : Pascagoula, MS	0.000	0.101		0.189		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - LM	SS/CPIF	Lockheed Martin : Moorestown, NJ	178.389	52.438		62.020	Oct 2013	3.997	Oct 2014	-		3.997	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - NSWCD PHD	MIPR	NSWC/PHD : Port Hueneme, CA	30.171	12.733		10.557	Oct 2013	3.803	Oct 2014	-		3.803	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fielding - Aegis Weapon System (AWS) - Production and Deployment - PEO IWS	MIPR	PEO IWS : Washington Navy Yard, DC	35.100	1.592		6.547	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - Raytheon	C/CPAF	Raytheon : Washington, DC	12.187	0.792		3.031	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment - SupShip	MIPR	SUPSHIP : Bath. ME	0.000	5.700		3.700		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment NAVSEA	MIPR	NAVSEA : VA	109.548	4.926		2.000	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment SPAWAR CH	MIPR	SPAWAR CH : Charleston, SC	0.000	0.015		0.256		-		-		-	Continuing	Continuing	Continuing
Fielding - Aegis Weapon System (AWS) - Production and Deployment SPAWAR OAC	MIPR	SPAWAR PAC : San Diego, CA	0.000	0.267		0.379		-		-		-	Continuing	Continuing	Continuing
SM-3 Manufacturing - SM-3 BLK IB MANUFACTURING - MD09	SS/CPAF	Raytheon : Tucson, AZ	337.105	-		-		85.801	Oct 2014	-		85.801	-	422.906	-
Fleet Integration - 20098185191945	MIPR	NSWC/PHD : Port Hueneme, CA	16.615	0.423		1.663	Nov 2013	2.393	Nov 2014	-		2.393	Continuing	Continuing	Continuing
Fleet Integration - MD09	MIPR	SMDC/ARSTRST : Huntsville, AL	8.623	0.119		0.144	Nov 2013	0.137	Nov 2014	-		0.137	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 20117142371317	MIPR	CSCS : Dahlgren, VA	10.366	0.782		1.426	Nov 2013	1.360	Nov 2014	-		1.360	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Fleet Integration - MD09 - 20117142371318	MIPR	JHU/APL/MD : Columbia, MD	5.181	1.236		0.987	Nov 2013	0.941	Nov 2014	-		0.941	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2011714237132	MIPR	NSWC/DD : Dahlgren, VA	13.766	2.067		1.600	Nov 2013	1.526	Nov 2014	-		1.526	Continuing	Continuing	Continuing
Fleet Integration - MD09 - 2012723031274	MIPR	MDA : VA	2.072	-		0.111	Nov 2013	0.106	Nov 2014	-		0.106	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - CSS Support	C/CPFF	Sparta : AL, CO	0.000	6.383		7.674	Nov 2013	7.973	Nov 2014	-		7.973	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Engineering Support	C/CPAF	Northrop Grumman : CO	0.000	2.360		2.500	Nov 2013	2.500	Nov 2014	-		2.500	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Integration	MIPR	AMRDEC : AL	0.000	1.935		2.570	Nov 2013	2.863	Nov 2014	-		2.863	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - M&S HWIL Engineering - Prime	C/CPFF	Teledyne Brown Engineering : AL, CO	0.000	23.938		26.700	Nov 2013	26.740	Nov 2014	-		26.740	Continuing	Continuing	Continuing
Modeling & Simulation HWIL Framework, Simulations, Models - Single Stimulation Framework & Objective Simulation Framework, Procure, Install, Test - MD09	C/CPAF	Boeing : AL	151.380	-		-		-		-		-	Continuing	Continuing	Continuing
Systems Engineering & Integration - CSS - MD09	C/CPFF	Cobham : CA	6.660	-		-		-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Systems Engineering & Integration - Systems Engineering	MIPR	MDA : ARLINGTON, VA	31.822	3.608		3.673	Nov 2013	8.007	Nov 2014	-		8.007	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - CSS	C/CPFF	CSC : VA	7.811	1.546		1.573	Nov 2013	1.000	Nov 2014	-		1.000	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - Industry	C/CPAF	Boeing : VA	12.117	4.909		5.245	Nov 2013	6.600	Nov 2014	-		6.600	Continuing	Continuing	Continuing
Systems Engineering & Integration - Systems Engineering - OGA	MIPR	AMRDEC : AL	0.000	-		-		2.281	Nov 2014	-		2.281	Continuing	Continuing	Continuing
M&S Digital Framework, Simulation, Models - Digital Simulation Architecture - MD09	C/CPAF	Northrop Grumman : CO	10.533	4.459		4.983	Nov 2013	4.957	Nov 2014	-		4.957	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations) - Verification & Assessment - CSS Support	C/CPFF	CSC : AL	0.000	-		-		6.905	Nov 2014	-		6.905	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations) - Verification & Assessment - CSS Support (2)	C/CPFF	Sparta : AL	0.000	-		-		2.203	Nov 2014	-		2.203	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations) - Verification & Assessment - Industry	C/CPAF	Boeing : AL	0.000	-		-		1.365	Nov 2014	-		1.365	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment	MIPR	AMRDEC : AL	0.000	-		-		7.257	Nov 2014	-		7.257	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract		
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost					
(VV&A) (previously VV&A and Test Operations) - Verification & Assessment - OGA																	
Subtotal				3,779.154	624.269			562.112		654.334		-		654.334	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09	MIPR	MDA MIDAESS : Arlington, VA	0.000	3.789		10.824	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 -	MIPR	Dahlgren : Dahlgren, VA	4.817	-		1.203	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 0	MIPR	MDA : Arlington, VA	38.376	3.256		5.616	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 20117142431989	MIPR	NAVSEA : Washington, DC	19.430	1.312		2.920	Oct 2013	9.000		-		9.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 20117142432002	C/CPIF	Lockheed Martin : Arlington, VA	2.006	-		0.293	Nov 2013	25.000		-		25.000	Continuing	Continuing	Continuing

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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 20117142432014	C/CPAF	Raytheon : Arlington, VA	1.960	-		0.274	Nov 2013	25.981		-		25.981	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 20117142432019	MIPR	Aegis BMD : Dahlgren, VA	3.148	0.686		0.328	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 20117142432022	MIPR	MDA : Arlington, VA	24.262	0.034		2.734	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 4.X Development - BMD 4.0 Dev - MD09 - 2012722816284	MIPR	JHU/APL : Columbia MD	0.000	-		0.405	Nov 2013	7.000		-		7.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09	MIPR	MDA : Arlington, VA	18.282	14.270		8.105	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 -	MIPR	JHU/APL : Columbia MD	0.000	-		0.584	Nov 2013	2.000		-		2.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454161	MIPR	NAVSEA : Washington, DC	11.125	5.750		4.214	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454173	MIPR	Dahlgren : Dahlgren, VA	9.022	-		1.736	Nov 2013	2.000		-		2.000	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0	C/CPIF	Lockheed Martin : Arlington, VA	0.849	-		0.423	Nov 2013	13.418		-		13.418	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development - MD09 - 20117142454175															
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454178	C/CPAF	Raytheon : Arlington, VA	0.287	-		0.395	Nov 2013	-		-		-	-	0.682	-
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454181	MIPR	Aegis BMD : Dahlgren, VA	21.306	3.006		0.474	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454184	MIPR	MDA : Arlington, VA	33.554	0.150		3.945	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.0 Development - MD09 - 20117142454188	MIPR	MDA MIDAESS : Arlington, VA	0.000	16.606		15.621	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09	MIPR	MDA : Arlington, VA	3.383	8.815		12.615	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 2011714247033	MIPR	NAVSEA : Washington, DC	2.637	3.552		6.560	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470341	MIPR	Dahlgren : Dahlgren, VA	6.069	-		2.702	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470344	C/CPIF	Lockheed Martin : Arlington, VA	0.225	-		0.659	Nov 2013	6.564		-		6.564	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1	C/CPAF	Raytheon : Arlington, VA	0.182	-		0.615	Nov 2013	-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development - MD09 - 20117142470352															
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470355	MIPR	Aegis BMD : Dahlgren, VA	2.529	1.860		0.738	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470358	MIPR	MDA : Arlington, VA	21.432	0.091		6.141	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470359	MIPR	MDA MIDAESS : Arlington, VA	0.000	10.260		24.315	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) 5.1 Development - MD09 - 20117142470359 - 2012722862854	MIPR	JHU/APL : Columbia MD	0.000	-		0.910	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09	MIPR	JHU/APL : Columbia MD	0.000	-		0.173	Nov 2013	2.000		-		2.000	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 -	MIPR	MDA : Arlington, VA	20.908	8.478		1.720	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487038	MIPR	NAVSEA : Washington, DC	77.894	3.417		1.246	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487073	MIPR	Dahlgren : Dahlgren, VA	9.053	-		0.513	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487113	C/CPIF	Lockheed Martin : Arlington, VA	2.009	-		0.125	Nov 2013	9.476		-		9.476	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487117	C/CPAF	Raytheon : Arlington, VA	0.318	-		0.117	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487119	MIPR	Aegis BMD : Dahlgren, VA	37.659	1.790		0.140	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487125	MIPR	MDA : Arlington, VA	26.989	0.090		1.166	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Standard Missile-3 (SM-3) Block IB Development - MD09 - 20117142487128	MIPR	MDA MIDAESS : Arlington, VA	0.000	9.870		4.617	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			399.711	97.082		125.166		102.439		-		102.439	-	-	-

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations) - M&S VV&A and Test Operations - MD09	C/CPAF	Northrop Grumman : VA	60.943	-		-		-		-		-	-	60.943	-
BMDS Verification, Validation & Assessment (VV&A) (previously VV&A and Test Operations) - M&S VV&A and Test Operations - OGA	MIPR	AMRDEC : AL	0.000	7.482		9.340	Nov 2013	-		-		-	Continuing	Continuing	Continuing
BMDS Verification, Validation & Assessment	MIPR	Various : VA, AL, CO	0.000	3.014		2.387	Nov 2013	-		-		-	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
(VV&A) (previously VV&A and Test Operations) - Validation & Verification Support															
Subtotal			60.943	10.496		11.727		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4,239.808	731.847	699.005	756.773	-	756.773	-	-	-

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.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
BMD 3.6.1 Ship Installations	✧	✧	✧	✧																								
BMD 5.1 Demo																												
BMD 5.1 Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧								
BMD 5.1 Preliminary Design Review (PDR)					△																							
BMD 5.1 Critical Design Review (CDR)									△																			
BMD 5.0 CU Certification													△															
BMD 5.0 CU Development	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧																
BMD 5.0 CU Demo	▲																											
BMD 4.0 Ship Installations	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧								
BMD 5.0 Ship Installations	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧	✧								
BMD 5.1 Certification																					△							
BMD 5.1 System Design Review (SDR) #2	▲																											
SM-3 Blk IB Missile Deliveries		✦	✦	✦																								
SM-3 Blk IB Hazard Assessment Testing	✦	✦																										
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD09 / Aegis BMD
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
BMD 3.6.1 Ship Installations	1	2013	1	2014
BMD 5.1 Demo	2	2017	2	2017
BMD 5.1 Development	1	2013	4	2017
BMD 5.1 Preliminary Design Review (PDR)	1	2014	1	2014
BMD 5.1 Critical Design Review (CDR)	1	2015	1	2015
BMD 5.0 CU Certification	3	2015	3	2015
BMD 5.0 CU Development	1	2013	2	2015
BMD 5.0 CU Demo	1	2013	1	2013
BMD 4.0 Ship Installations	1	2013	1	2015
BMD 5.0 Ship Installations	1	2013	4	2017
BMD 5.1 Certification	2	2018	2	2018
BMD 5.1 System Design Review (SDR) #2	1	2013	1	2013
SM-3 Blk IB Missile Deliveries	2	2013	4	2013
SM-3 Blk IB Hazard Assessment Testing	1	2013	2	2013
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MC09 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC09: <i>Cyber Operations</i>	-	-	0.260	0.265	-	0.265	0.269	0.273	0.279	0.279	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 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 2013	FY 2014	FY 2015
Title: Network / System Certification and Accreditation (C&A)	-	0.260	0.265
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: See MD09 for FY 2013 plans.			
FY 2014 Plans:			
- Conduct cyber security / information assurance engineering and architecture planning for Aegis BMD information technology systems.			
- Plan and test the Information Assurance (IA) controls for Ballistic Missile Defense System (BMDS) Aegis BMD systems.			
- Develop Aegis BMD DIACAP certification and accreditation packages.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- 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. FY 2015 Plans: - 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	-	0.260	0.265

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: Ballistic Missile Defense Technology	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: Ballistic Missile Defense Sensors	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: Ballistic Missile Defense Joint Warfighter Support	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: Missile Defense Integration and Operations Center (MDIOC)	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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C. Other Program Funding Summary (\$ in Millions)

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0604880C: Land Based SM-3 (LBSM3)	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing
• 0901598C: Management HQ - MDA	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MC09 / Cyber Operations
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies : Huntsville, AL	0.000	-		0.260	Jul 2014	0.265	Oct 2014	-		0.265	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.260		0.265		-		0.265	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.260	0.265	-	0.265	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MT09 / Aegis BMD Test			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT09: <i>Aegis BMD Test</i>	-	166.697	137.352	89.628	-	89.628	50.934	86.295	117.652	120.869	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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 2013	FY 2014	FY 2015
Title: Aegis Ballistic Missile Defense (BMD) Testing	41.986	55.160	39.332
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments:			
- Conducted Aegis BMD-specific analysis during pre- and post-mission analysis phases.			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014		FY 2015
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<p>- Began test planning for FY 2014 Aegis flight test missions: prepared target, developed models and simulations, and readied the range for test.</p> <p>- Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.</p> <p>- Participated in BMD special technology experiments.</p> <p>FY 2014 Plans:</p> <p>- Continue to conduct Aegis BMD-specific analysis during pre and post-mission analysis phases.</p> <p>- Begin test planning for FY 2015 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test.</p> <p>- Continue to conduct Post Flight Analysis for test conducted in FY 2014 Aegis flight test missions.</p> <p>- 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> <p>- Participate in BMD special technology experiments.</p> <p>FY 2015 Plans:</p> <p>- Continue to conduct Aegis BMD-specific analysis during pre and post-mission analysis phases.</p> <p>- Begin test planning for FY 2016 Aegis flight test missions: prepare target, develop models and simulations, and ready the range for test.</p> <p>- Continue to conduct Post Flight Analysis for test conducted in FY 2015 Aegis flight test missions.</p> <p>- 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> <p>- Participate in BMD special technology experiments.</p>				
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Title: BMDS Level Testing	103.605	63.040		38.000
Articles:	-	-		-

Description: See Description below.

FY 2013 Accomplishments:

- Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.
- Exercised Phase II capability of the Phased Adaptive Approach.

FY 2014 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.

FY 2015 Plans:

- Prepare for and conduct BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Exercise of Phase II capability of the Phased Adaptive Approach			
<p>Title: Modeling & Simulation Hardware-In-the-Loop (HWIL) Framework, Simulations, Models</p> <p>Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Continued to deploy and integrated 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 supported execution of increasingly more complex BMDS ground test campaigns. - Supported BMDS HWIL SSF V&V and data analysis for BMDS ground tests and demos. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - 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. <p>FY 2014 decrease is due to initial consolidation of Digital and HWIL frameworks as part of OSF implementation.</p> <p>FY 2015 Plans:</p> <p>No funding requested due to completion of consolidation of Digital and HWIL frameworks as part of OSF implementation.</p> <p>The FY 2015 plans for this activity are realigned within new MT23 Accomplishment/Planned Program: Engineering and Analysis.</p>	21.106	19.152	-
	-	-	-
<p>Title: Engineering & Analysis</p> <p>Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>N/A</p> <p>FY 2014 Plans:</p> <p>N/A</p> <p>FY 2015 Plans:</p>	-	-	12.296
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP): - Design test architecture, define target requirements, and generate appropriate scenarios for ground and flight tests. - Track Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements and sufficiency. - Participate in major test reviews. - Utilize models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates. - Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements. - Develop and establish hardware-in-the-loop (HWIL) M&S integration test cases for ground and flight tests (pre-post mission). - Provide modeling and technical analysis support during Combatant Command (COCOM) wargames and exercises.			
Accomplishments/Planned Programs Subtotals	166.697	137.352	89.628

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0604881C: AEGIS SM-3 Block IIA Co-Development	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	1,232.233

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. Competition will be maximized for procurement of any products or services in FY 2014, as appropriate.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) Testing - MT09 -	MIPR	NSWC : DAHLGREN, VA	0.000	8.254		6.804	Oct 2013	4.853	Oct 2014	-		4.853	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597076	MIPR	PMRF Barking Sands : Kauai, HI	0.000	-		3.589	Oct 2013	2.559	Oct 2014	-		2.559	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597078	MIPR	NAWC/ PM PT : MUGU, CA	0.000	-		3.663	Oct 2013	2.612	Oct 2014	-		2.612	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202597082	MIPR	NSWC DD/ : DAHLGREN, VA	0.000	-		2.456	Oct 2013	1.751	Oct 2014	-		1.751	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630564	MIPR	JHU/APL/ MD : COLUMBIA, MD	0.000	16.750		14.576	Nov 2013	10.393	Nov 2014	-		10.393	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630567	MIPR	Aegis BMD : VA	0.000	1.591		4.604	Oct 2013	3.283	Oct 2014	-		3.283	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 201112202630569	SS/CPIF	Lockheed Martin : Moorestown, NJ	0.000	-		6.801	Oct 2013	4.849	Oct 2014	-		4.849	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 20111220263057	MIPR	SPAWAR : San Diego, CA	0.000	1.800		5.153	Oct 2013	3.674	Oct 2014	-		3.674	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - 20111220266947	MIPR	NSWC/PHD PT. : HUENEME, CA	0.000	6.900		7.514	Oct 2013	5.358	Oct 2014	-		5.358	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09 - NAVSEA	MIPR	NAVSEA : VA	0.000	0.480		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09- Corona	MIPR	NSWC Corona : CA	0.000	4.105		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense (BMD) Testing - MT09- Various	Various	Various : HI, VA, CA, MA	0.000	2.106		-		-		-		-	Continuing	Continuing	Continuing
BMDS Level Testing - MT09	MIPR	NSWC PHD PT. : HUENEME, CA	0.000	11.764		4.108	Oct 2013	2.477	Oct 2014	-		2.477	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535339	MIPR	JHU/APL/MD : COLUMBIA, MD	0.000	11.455		10.425	Oct 2013	6.284	Oct 2014	-		6.284	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 20111220253534	MIPR	NAVSEA : VA	0.000	0.625		13.282	Oct 2013	8.006	Oct 2014	-		8.006	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535342	MIPR	SPAWAR SAN DIEGO : CA	0.000	8.549		1.913	Oct 2013	1.153	Oct 2014	-		1.153	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535344	MIPR	CORONA : CA	0.000	5.435		2.112	Oct 2013	1.273	Oct 2014	-		1.273	Continuing	Continuing	Continuing
BMDS Level Testing - MT09 - 201112202535347	MIPR	LOCKHEED MARTIN : MOORESTOWN NJ	0.000	9.865		5.231	Oct 2013	3.153	Oct 2014	-		3.153	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMD Level Testing - MT09 - 201112202535348	MIPR	MDA : VA	0.000	6.187		25.969	Oct 2013	15.654	Oct 2014	-		15.654	Continuing	Continuing	Continuing
BMD Level Testing - MT09 - NSWC DD	MIPR	NSWC DD : Dahlgren, VA	0.000	4.595		-		-		-		-	Continuing	Continuing	Continuing
BMD Level Testing - MT09 - PM PT	MIPR	NAWC/ PM PT : MUGU, CA	0.000	5.750		-		-		-		-	Continuing	Continuing	Continuing
BMD Level Testing - MT09 - PMRF	MIPR	PMRF Barking Sands : Hawaii	0.000	10.932		-		-		-		-	Continuing	Continuing	Continuing
BMD Level Testing - MT09 - Pearl Harbor	MIPR	Commander Pacific Fleet : Pearl Harbor, HI	0.000	6.150		-		-		-		-	Continuing	Continuing	Continuing
BMD Level Testing - MT09 - Target Hardware	MIPR	MDA : VA	0.000	15.110		-		-		-		-	Continuing	Continuing	Continuing
BMD Level Testing - Various	MIPR	Various : VA, MD, CA, DC, MA, AL, TN, NM	0.000	7.188		-		-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation Hardware-In-the-Loop (HWIL) Framework, Simulations, Models - Objective Simulation Framework, Procure, Install, Test	C/CPAF	Boeing : AL	0.000	11.369		12.790	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation Hardware-In-the-Loop (HWIL) Framework, Simulations, Models - Test Analysis Support	MIPR	Various : AL, CO, VA	0.000	2.013		1.522	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Modeling & Simulation Hardware-In-the-Loop (HWIL) Framework, Simulations, Models - Test Engineering Support	MIPR	MDA : Various	0.000	7.724		4.840	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis	MIPR	Various : AL, CO, VA	0.000	-		-		6.257	Nov 2014	-		6.257	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Engineering & Analysis - Engineering & Analysis - Engineering Support	C/CPAF	Northrop Grumman : AL, CO	0.000	-		-		1.360	Nov 2014	-		1.360	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis - Industry	C/CPAF	Boeing : AL	0.000	-		-		1.079	Nov 2014	-		1.079	Continuing	Continuing	Continuing
Engineering & Analysis - Engineering & Analysis - OGA	MIPR	AMRDEC : AL	0.000	-		-		3.600	Nov 2014	-		3.600	Continuing	Continuing	Continuing
Subtotal			0.000	166.697		137.352		89.628		-		89.628	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	166.697	137.352	89.628	-	89.628	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											
FTM-20 (Aegis Simulated Intercept Flight Test)		▲																										
FTM-22 (Aegis Intercept Flight Test)					▲																							
FTM-21 (Aegis Intercept Flight Test) (Salvo)						▲																						
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)						▲																						
FTX-20 (Aegis Simulated Intercept Flight Test)												△																
GTD-04E												△																
FTX-18 (Aegis Simulated Intercept Flight Test)												△																
FTX-19 (Aegis Simulated Intercept Flight Test)												△																
AA CTV-01 (Aegis Ashore Flight Test)																												
Fast Event 2																												
Fast Event 1																												
FTM-24 (Aegis Intercept Flight Test)																												
FTM-26 (Aegis Intercept Flight Test)																												
FTO-02 E1 (Aegis Ashore Intercept Flight Test)																												
FTM-25 (Aegis Intercept Flight Test)																												
FTO-02 E2 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																												
FTX-23 (Aegis Flight Test)																												
FTM-29 (Aegis Intercept Flight Test)																												
FTO-03 E2 (Aegis Multiple Engagement Flight Test)																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test
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Significant Event Complete ▲	Milestone Decision Complete ★	Element Test Complete ◆	System Level Test Complete ●	Complete Activity ✦
Significant Event Planned △	Milestone Decision Planned ☆	Element Test Planned ◇	System Level Test Planned ○	Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTO-03 E3 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)																								▲				
FTM-35 (Aegis Intercept Flight Test)																												▲

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MT09 / Aegis BMD Test

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
FTM-20 (Aegis Simulated Intercept Flight Test)	2	2013	2	2013
FTM-22 (Aegis Intercept Flight Test)	1	2014	1	2014
FTM-21 (Aegis Intercept Flight Test) (Salvo)	4	2013	4	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2013	4	2013
FTX-20 (Aegis Simulated Intercept Flight Test)	1	2015	1	2015
GTD-04E	1	2015	1	2015
FTX-18 (Aegis Simulated Intercept Flight Test)	1	2015	1	2015
FTX-19 (Aegis Simulated Intercept Flight Test)	2	2015	2	2015
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
Fast Event 2	4	2014	4	2014
Fast Event 1	4	2014	4	2014
FTM-24 (Aegis Intercept Flight Test)	3	2015	3	2015
FTM-26 (Aegis Intercept Flight Test)	1	2015	1	2015
FTO-02 E1 (Aegis Ashore Intercept Flight Test)	3	2015	3	2015
FTM-25 (Aegis Intercept Flight Test)	1	2015	1	2015
FTO-02 E2 (AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2015	4	2015
FTX-23 (Aegis Flight Test)	4	2019	4	2019
FTM-29 (Aegis Intercept Flight Test)	1	2018	1	2018
FTO-03 E2 (Aegis Multiple Engagement Flight Test)	3	2018	3	2018
FTO-03 E3 (GM/AA/Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2018	4	2018
FTM-35 (Aegis Intercept Flight Test)	4	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MX09: Aegis BMD Development Support	4.427	12.094	23.960	28.758	-	28.758	47.911	54.187	59.736	59.797	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

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. This support is identified under several categories. First, 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 (AN/SPY-radar / Fire Control Section (FCS)) alignment updates (as required). Second, 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 2013	FY 2014	FY 2015
Title: Aegis Ballistic Missile Defense Operations and Support	12.094	23.960	28.758
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments:			
- Provided In-service Engineering support to Aegis BMD.			
- Provided operational and maintenance training for Aegis BMD ship crews.			
- Provided logistics support (including technical manuals, spares, and Reliability, Maintainability, and Availability analysis and products) for Aegis BMD.			
- Provided initial sustainment to Land Based SM-3 Pacific Missile Range Facility (PMRF).			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Provided Sustainment of BMD 3.6 Computer Program. - Provided Sustainment of Shipboard BMD Specific Equipment. - Provided Sustainment of SM-3. - Provided support to EPAA 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 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> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Provide Sustainment of BMD 3.6 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. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Increase in request from FY2014 to FY2015 due to the increase in sustainment support for additional shipsets.			
Accomplishments/Planned Programs Subtotals	12.094	23.960	28.758

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603902C: Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0604880C: Land Based SM-3 (LBSM3)	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing
• 0604881C: AEGIS SM-3 Block IIA Co-Development	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	1,232.233

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Ballistic Missile Defense Operations and Support - ABMD O&S - MX09	MIPR	JHU/APL : MD	4.427	0.604		23.960	Oct 2013	28.758	Oct 2014	-		28.758	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09 - Corona	MIPR	NSWC Corona : Corona, CA	0.000	0.706		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09 - DD	MIPR	NSWC/DD : VA	0.000	5.100		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09 - NAVSEA	MIPR	NAVSEA : Wash Navy Yard	0.000	0.862		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09 - NSWC CD	MIPR	NSWC Carderock : MD	0.000	1.171		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09 - PHD	MIPR	NSWC PHD : Port Hueneme, CA	0.000	0.927		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09- LM	C/CPFF	Lockheed Martin : Moorestown, NJ	0.000	1.754		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09- PMRF	MIPR	PMRF : Hawaii	0.000	0.175		-		-		-		-	Continuing	Continuing	Continuing
Aegis Ballistic Missile Defense Operations and Support - MX09- Tech Rep	MIPR	Tech Rep : Moorestown, NJ	0.000	0.795		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			4.427	12.094		23.960		28.758		-		28.758	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MX09 / Aegis BMD Development Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	4.427	12.094	23.960	28.758	-	28.758	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	40.197	47.868	49.351	53.784	-	53.784	56.154	57.100	58.555	51.519	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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. 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

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	47.868	49.351	53.784
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	47.868	49.351	53.784

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

NA

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603892C / AEGIS BMD	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	-		1.621	Mar 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Civilian Salaries	Allot	MDA : Multi: AK, AL, CO, CA, VA	24.331	37.248		34.363	Oct 2013	43.397	Nov 2014	-		43.397	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	1.500	8.982		5.450	Mar 2014	6.100	Mar 2015	-		6.100	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	14.366	0.581		7.917		4.287	Jan 2015	-		4.287	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	MIPR	Various : Multi: AL, CA, CO, VA	0.000	1.057		-		-		-		-	1.615	2.672	-
Subtotal			40.197	47.868		49.351		53.784		-		53.784	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	40.197	47.868	49.351	53.784	-	53.784	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	621.913	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	620.859	42.957	38.223	29.532	-	29.532	31.717	32.377	32.931	33.722	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	1.054	2.463	2.124	1.814	-	1.814	1.980	2.165	2.386	2.594	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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. 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 cueing 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 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 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.

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>
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The Missile Defense Agency has developed, and is testing, two STSS-D satellites to demonstrate key functions of space sensors in support of risk reduction for future MDA space-layer options. 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 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.

- STSS-D Satellites have demonstrated the capability of satellites to track ballistic missiles and the ability to provide accurate tracking information to the 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 Ballistic Missile Defense System (BMDS) sensors will extend coverage to a global level
- 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 Space Tracking and Surveillance System Demonstration (STSS-D) Satellites

- Risk reduction for future Missile Defense Agency (MDA) space-layer architectures by demonstrating Aegis Engage on Remote
- 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 developing 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

- Provide a data collection capability from the Missile Defense Space Center (MDSC) against ground, air, space and ballistic missile targets of opportunity for MDA and other U.S. Government Agencies

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>
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- Conduct low earth orbit satellite-to-satellite and satellite-to-ground laser communication experiments per Project Agreement with the government of Germany

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

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	51.313	44.947	32.007	-	32.007
Current President's Budget	45.420	40.347	31.346	-	31.346
Total Adjustments	-5.893	-4.600	-0.661	-	-0.661
• Congressional General Reductions	-0.067	-0.100			
• Congressional Directed Reductions	-	-4.500			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.101	-			
• SBIR/STTR Transfer	-0.614	-			
• Other Adjustment	-4.111	-	-0.661	-	-0.661

Change Summary Explanation

The FY 2015 reduction of \$0.661 reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>				Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD12: <i>Space Tracking and Surveillance System (STSS)</i>	620.859	42.957	38.223	29.532	-	29.532	31.717	32.377	32.931	33.722	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

Space Tracking and Surveillance System Demonstration (STSS-D) Satellites

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 satellites are operated 24 hours a day, 7 days a week from the ground station processing center at the Missile Defense Space Center (MDSC) with a government and contractor team. On-orbit, STSS-D satellites continue data collection and analyses in FY 2014 and beyond striving to view high-value 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 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-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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>

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-D satellites through C2BMC to Aegis, Ground-based Midcourse Defense (GMD), or other interceptors.

Near Field Infrared Experiment (NFIRE)

The NFIRE satellite is operated from the Missile Defense Space Center (MDSC) and is capable of collecting 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, 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. 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).

Lessons learned and data gathered from the Space Tracking and Surveillance System Demonstration (STSS-D) satellites 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 2013	FY 2014	FY 2015
Title: Demonstration Satellites	39.112	31.756	23.345
Articles:	-	-	-
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 Ballistic Missile Defense System and space-layer future capabilities.			
FY 2013 Accomplishments:			
- Demonstrated Aegis Launch on Remote using a Standard Missile-3 (SM-3) intercept test which resulted in the first ever intercept of a ballistic missile target using STSS-D as a remote sensor (FTM-20)			
- Conducted 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 continued the execution of the STSS-D-related Knowledge Point (KP) data collects			
- Collected data during BMDS Integrated Master Test Plan (IMTP) events for KPs			
- Conducted independent government verification of STSS-D data at the Missile Defense System Development Center (MDSDC)			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Performed satellite functionality testing and calibration as part of the satellite operations - Transitioned testing from dedicated, more costly, first-time efforts to missions collecting data to verify earlier results. These verifications further strengthened BMDS-related modeling and simulation as well as supported development of future systems design and concept of operations. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Demonstrate GMD Fire Control Launch on Remote using STSS-D. - Demonstrate Aegis Engage on Remote using STSS-D. - Demonstrate Space Situational Awareness using STSS-D - Collect data to support discrimination with STSS-D in studies - Collect data to support Hit/Kill assessment with STSS-D - Conduct missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing - Testing with the STSS-D satellites continues the accomplishment of the Space KP - Perform satellite functionality testing and calibration as part of the satellite operations <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Testing with the STSS-D satellites continues to demonstrate critical space capabilities: -- Aegis Engage on Space Tracking and Surveillance System Demonstration Satellites against lethal object -- Aegis Launch on/Engage on using STSS-D against multiple targets -- Aegis Launch on/Engage on using STSS-D against a raid -- Ability to support Hit/Kill assessment from space -- Ability to support Discrimination -- Ability to support Space Situational Awareness mission from space -- Ability to cue Ballistic Missile Defense System (BMDS) sensors from space -- Ability to integrate space into emerging fire control loops - Perform satellite functionality testing and calibration as part of the satellite operations - Conduct missile tracking experiments as identified in the test specific sections, BMDS Level Testing and Element Integration and Testing 				
Title: BMDS Level Testing		2.419	1.914	1.634
		Articles:	-	-
<p>Description: Space Tracking and Surveillance System Demonstration (STSS-D) Satellites and Near Field Infrared Experiment (NFIRE) satellites participate in the 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.</p>				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p><i>FY 2013 Accomplishments:</i></p> <ul style="list-style-type: none"> - Planned and executed STSS-D participation in BMDS flight tests, which collected from a variety of test targets and conditions enabled a statistically relevant database to be constructed to support future space system design. Testing included: <ul style="list-style-type: none"> -- Aegis Simulated Intercept Flight Test (FTM-20): STSS-D provided to an Aegis4.0.2 ship the Quality of Service data track that initiated a Remote Engagement Authorized (REA) launch of a SM-3 Block IA against a Medium Range Ballistic Missile (MRBM) target -- Ground Based Midcourse Flight Test (FTG-07) -- Flight Test Operational (FTO-01) - Planned and participated in high-value Targets of Opportunity (TOOs) - Collected both STSS-D and NFIRE data during TOOs and provided the data to external agencies for analysis <p><i>FY 2014 Plans:</i></p> <ul style="list-style-type: none"> - Risk reduction for future MDA space-layer to include Overhead Persistent Infrared (OPIR) Enterprise integration and demonstrations across Overhead Persistent Infrared (OPIR) cuing, Joint Tasking Operations, and data utility - Conduct STSS-D data collections to support joint OPIR mission utility assessments across Space Situation Awareness, Battle Space Awareness, and Technical Intelligence missions to include integration, analysis, and studies to confirm data sharing capabilities - Demonstrate STSS-D providing precision tracking, cues, and discrimination support to future versions of Command and Control, Battle Management and Communications (C2BMC) and BMDS weapon systems (sensors and shooters) to evaluate performance, Concept of Operations, and Tactics, Techniques, and Procedures. - Space Tracking and Surveillance System Demonstration (STSS-D) satellites participation in the Integrated Master Test Plan (IMTP) 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 (FTX-18) -- Ground-based Midcourse Defense Intercept Flight Test (FTG-06b) <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Risk reduction for future Missile Defense Agency (MDA) space-layer to include OPIR Enterprise integration and demonstrations across OPIR cuing, Joint Tasking Operations, and data utility - Conduct STSS-D data collections to support joint OPIR mission utility assessments across Space Situation Awareness, Battle Space Awareness, and Technical Intelligence missions to include integration, analysis, and studies to confirm data sharing capabilities 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>- Demonstrate STSS-D providing precision tracking, cues, and discrimination support to future versions of C2BMC and BMDS weapon systems (sensors and shooters) to evaluate performance, Concept of Operations, and Tactics, Techniques, and Procedures.</p> <p>- Current STSS-D participation in the Integrated Master Test Plan:</p> <ul style="list-style-type: none"> -- Aegis Flight Test (FTX-20) -- Aegis Flight Test (FTM-25) -- Aegis Flight Test (FTM-26) -- Aegis Intercept Flight Test (FTX-19) -- Ground-based Midcourse Defense Intercept Flight Test (FTG-09) -- Aegis Flight Test, Standard Missile (FTM-24) -- OTA Intercept Flight Test (FTO-02 E1) -- Aegis Flight Test (FTX-21) -- OTA Intercept Flight Test (FTO-02 E1) -- Aegis Flight Test (FTX-21) 				
<p>Title: Near Field Infrared Experiment (NFIRE)</p> <p align="right">Articles:</p> <p>Description: NFIRE satellite is capable of providing critical space, earth phenomenology and missile characterization data for use in the BMDS.</p> <p>FY 2013 Accomplishments:</p> <p>- NFIRE successfully executed Environmental/Civil collections, Missile Defense/Warning collections, Technical Intel/Battle Space Awareness collections, and Space Situational Awareness collections.</p> <p>FY 2014 Plans:</p> <p>-Provide 95% operations availability of the Near Field Infrared Experiment (NFIRE) satellite</p> <p>FY 2015 Plans:</p> <p>-Provide 95% operations availability of the NFIRE satellite</p>		1.426 -	4.553 -	4.553 -
Accomplishments/Planned Programs Subtotals		42.957	38.223	29.532

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	5.977	6.515	6.389	-	6.389	7.112	7.290	7.454	7.665	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666
• 0604886C: <i>Advanced Remote Sensor Technology (ARST)</i>	15.596	-	-	-	-	-	-	-	-	-	15.596

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-D 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 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.

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

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Demonstration Satellites - Capability Based R&D	SS/CPAF	NGAS : Redondo Beach, CA, Schriever AFB, CO	494.089	28.028		24.021	Oct 2013	20.506	Oct 2014	-		20.506	Continuing	Continuing	Continuing
Demonstration Satellites - STSS Support to Missile Defense Space Center (MDSC)	SS/CPAF	NGIS : Schriever AFB, CO	14.960	1.357		0.770	Oct 2013	0.132	Oct 2014	-		0.132	Continuing	Continuing	Continuing
Demonstration Satellites - Systems Engineering	FFRDC	Aerospace : Los Angeles CA, Schriever AFB CO	45.922	4.123		1.248	Oct 2013	1.346	Oct 2014	-		1.346	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) - Prime Contract	SS/CPAF	Orbital Sciences Corporation : AZ	0.000	0.654		1.705	Jul 2014	-		-		-	Continuing	Continuing	Continuing
Near Field Infrared Experiment (NFIRE) - Various	C/Various	Various : Various	0.000	0.772		2.848	Jan 2014	-		-		-	Continuing	Continuing	Continuing
Subtotal			554.971	34.934		30.592		21.984		-		21.984	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Demonstration Satellites - Contract Support Services (CSS)	C/Various	MDA : AL, CO	12.489	2.466		2.995	Oct 2013	3.111	Oct 2014	-		3.111	Continuing	Continuing	Continuing
Demonstration Satellites - MDA Civilian	Allot	MDA : Schriever AFB, CO	6.277	1.533		1.692	Oct 2013	1.764	Oct 2014	-		1.764	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Demonstration Satellites - Other Government Agency (OGA) Civilian	MIPR	SMC : Schriever AFB, CO	10.154	0.558		0.451	Oct 2013	0.469	Oct 2014	-		0.469	Continuing	Continuing	Continuing
Demonstration Satellites - Program Mission Support	Various	Various : Various	20.048	1.047		0.579	Oct 2013	0.570	Oct 2014	-		0.570	Continuing	Continuing	Continuing
Subtotal			48.968	5.604		5.717		5.914		-		5.914	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
BMDS Level Testing - BMDS Integration-Test Engineering and Resources	SS/CPAF	NGAS : Redondo Beach, CA	16.920	2.419		1.914	Oct 2013	1.634	Oct 2014	-		1.634	Continuing	Continuing	Continuing
Subtotal			16.920	2.419		1.914		1.634		-		1.634	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency							Date: March 2014				
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>				Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>				
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract		
Project Cost Totals	620.859	42.957	38.223	29.532	-	29.532	-	-	-		

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTI-01 (Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test)	▲																											
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2013	▲																											
STSS Demonstration Satellites On-Orbit Operations - 1Q2013-4Q2013	✦	✦	✦	✦																								
FTM-20 (Aegis Intercept Flight Test)		▲																										
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2013		▲																										
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2013			▲																									
FTG-07 (GM Intercept Flight Test)			▲																									
FTO-01 (Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test)				▲																								
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2013				▲																								
FTM-21 (Aegis Intercept Flight Test)				▲																								
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014					▲																							
STSS Demonstration Satellites On-Orbit Operations - 1Q2014-4Q2014						✦	✦	✦	✦																			
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)							▲																					
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014							△																					
FTG-06b (GM Intercept Flight Test)							△																					
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2014								△																				

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2014								▲																				
FTX-20 (AEGIS 5.0 Target Only Flight Test)								▲																				
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015								▲																				
FTM-26 (AEGIS 5.0 Intercept Flight Test)								▲																				
FTM-25 (AEGIS 5.0 Intercept Flight Test)								▲																				
STSS Demonstration Satellites On-Orbit Operations - 1Q2015-4Q2015									✦	✦	✦	✦																
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)												▲																
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015												▲																
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)												▲																
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2015												▲																
FTO-02 E1 (OTA Intercept Flight Test)												▲																
FTG-09 (GM Intercept Flight Test)												▲																
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015													▲															
FTX-21 (AEGIS SBT Target Only Flight Test)													▲															
FTO-02 E2 (OTA Intercept Flight Test)													▲															
FTT-18 (TH Intercept Flight Test)													▲															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016																▲												
STSS Demonstration Satellites On-Orbit Operations - 1Q2016-4Q2016																	✦	✦	✦	✦								

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016													△															
FTM-27 (AEGIS SBT Intercept Flight Test)													△															
FTG-15 (GM Intercept Flight Test)													△															
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016													△															
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)													△															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2016														△														
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2017															△													
STSS Demonstration Satellites On-Orbit 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																			△									

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2018																				△								
STSS Demonstration Satellites On-Orbit 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																						△						
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2019																							△					
STSS Demonstration Satellites On-Orbit Operations - 1Q2019-4Q2019																							✦	✦	✦	✦		
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2019																							△					
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2019																								△				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2019																										△		

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

Events	Start		End	
	Quarter	Year	Quarter	Year
FTI-01 (Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test)	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
FTM-20 (Aegis Intercept Flight Test)	2	2013	2	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
FTG-07 (GM Intercept Flight Test)	3	2013	3	2013
FTO-01 (Aegis/Terminal High Altitude Area Defense (THAAD)/Patriot Multiple Engagement Flight Test)	4	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2013	4	2013	4	2013
FTM-21 (Aegis Intercept Flight Test)	4	2013	4	2013
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2014	1	2014	1	2014
STSS Demonstration Satellites On-Orbit Operations - 1Q2014-4Q2014	1	2014	4	2014
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)	2	2014	2	2014
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2014	2	2014	2	2014
FTG-06b (GM Intercept Flight Test)	2	2014	2	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
FTX-20 (AEGIS 5.0 Target Only Flight Test)	1	2015	1	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 1Q2015	1	2015	1	2015
FTM-26 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-25 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015
STSS Demonstration Satellites On-Orbit Operations - 1Q2015-4Q2015	1	2015	4	2015
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)	2	2015	2	2015
Space Tracking and Surveillance System (STSS) Demonstration Satellites-BMDS Flight Tests/TOO- 2Q2015	2	2015	2	2015
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 3Q2015	3	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/TOO- 4Q2015	4	2015	4	2015
FTX-21 (AEGIS SBT Target Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016	1	2016	1	2016
STSS Demonstration Satellites On-Orbit Operations - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016	2	2016	2	2016
FTM-27 (AEGIS SBT Intercept Flight Test)	2	2016	2	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)	3	2016	3	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016	3	2016	3	2016
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)	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 On-Orbit 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD12 / <i>Space Tracking and Surveillance System (STSS)</i>
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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 On-Orbit 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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2019	1	2019	1	2019
STSS Demonstration Satellites On-Orbit Operations - 1Q2019-4Q2019	1	2019	4	2019
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2019	2	2019	2	2019
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2019	3	2019	3	2019
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2019	4	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	1.054	2.463	2.124	1.814	-	1.814	1.980	2.165	2.386	2.594	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	2.463	2.124	1.814
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	2.463	2.124	1.814

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603893C / <i>Space Tracking and Surveillance System</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO,	0.000	-		0.035	Mar 2014	-		-		-	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	1.054	0.008		2.089	Mar 2014	1.814	Mar 2015	-		1.814	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPAF	Northrop Grumman : CO	0.000	2.455		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			1.054	2.463		2.124		1.814		-		1.814	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.054	2.463	2.124	1.814	-	1.814	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	38.053	5.977	6.515	6.389	-	6.389	7.112	7.290	7.454	7.665	Continuing	Continuing
MD33: <i>MD Space Exp Center (MDSEC)</i>	38.053	5.727	6.173	6.020	-	6.020	6.695	6.834	6.950	7.117	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	-	0.250	0.342	0.369	-	0.369	0.417	0.456	0.504	0.548	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

A. Mission Description and Budget Item Justification

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

The MDSC 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 MDSC conducts studies and experiments with Air Force Space Command seeking to optimize future MDA space-layer options to support Space Situational Awareness (SSA).

The MDSC 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 MDSC supports the operation and control of MDA satellites such as the Space Tracking and Surveillance System Demonstration (STSS-D) Satellites and the Near Field Infrared Experiment (NFIRE) satellite. In addition, the MDSC 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 capabilities.

Goals for the MDSC:

- Demonstrate critical space capabilities:
 - Aegis Engage on STSS-D against lethal object
 - Aegis Launch on/Engage on using STSS-D against multiple targets
 - Aegis Launch on/Engage on using STSS-D against a raid
 - Ability to support hit/kill assessment from space

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>
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- Ability to support discrimination
- Ability to support SSA mission from space
- Ability to cue BMDS sensors from space
- Ability to integrate space into emerging fire control loops
- Develop and refine ground operational concepts for MDA space systems, sensors, data, services, and networks
- Operate and refine the MDSC 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 Ballistic Missile Defense System (BMDS) community and external users
- Conduct experiments to test algorithm validity for Missile Defense space systems
- Mature Ballistic Missile Defense System (BMDS) space based sensing through studies, analysis, sensor data integration, algorithm development, performance assessments, and architecture improvements
- Develop and mature joint space sensing Concept of Operations (CONOPS), Tactics, Techniques, & Procedures (TTPs), and asset management to evaluate space based sensor contributions to the BMDS
- Integrate and evaluate Missile Defense Agency (MDA), other Department of Defense 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 infrared sensor data integration and exploitation
- Support development and demonstration of real-time Infrared/Radar data fusion (system track)
- 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 BMDS.

B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	6.912	6.515	6.522	-	6.522
Current President's Budget	5.977	6.515	6.389	-	6.389
Total Adjustments	-0.935	-	-0.133	-	-0.133
• Congressional General Reductions	-0.009	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.258	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-0.668	-	-0.133	-	-0.133

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>
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Change Summary Explanation

FY 2015 reduction of \$0.133 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD33: <i>MD Space Exp Center (MDSEC)</i>	38.053	5.727	6.173	6.020	-	6.020	6.695	6.834	6.950	7.117	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

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

A. Mission Description and Budget Item Justification

The Missile Defense Space Center (MDSC) allows Missile Defense Agency (MDA) elements to conduct satellite on-orbit operations and to conduct flight tests, demonstrations, experiments, data integration, algorithm development and testing and concept exploration. The annual operating expenses for the MDSC provide overhead functions to include security, configuration management, engineering, testing, 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); MDA C2BMC Experimentation Laboratory (X-Lab); MDA Enterprise Sensors Laboratory (ESL); and future MDA space-layer capabilities. The MDSC space-layer activities include integration, experimentation, and support 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 MDSC provides infrastructure to support satellite operations for STSS-D, NFIRE, and future space systems as the single location for MDA elements to conduct satellite on-orbit operations. The MDSC also provides a multi-level security environment for sensor data management and integration across space and terrestrial sensor data activities. MDSC experiments leverage Department of Defense (DOD)(Defense Support Program, Space Based Infrared System) and national security space capabilities. MDSC activities support analysis, demonstration and integration of space sensor capabilities into developmental and operational MDA elements. MDSC enables the development of advanced technology and algorithms including fusion of multiple sensor types (radar, overhead persistent infrared, electro-optical and other emerging sensor technologies). MDSC 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.

The MDSC continues to develop and refine on-orbit operations for the STSS-D satellites and NFIRE. In addition to satellite operations, the MDSC hosts a collaborative experimentation environment via the MDSC Interchange System (MIS) and the MDSC Test Integration Lab (TIL) for BMDS elements that rely on, experiment with,

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>

integrate with, or seek to improve the BMDS capability by utilizing space-based, systems-derived data. The MIS provides common, secure data architecture for MDA, DOD 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 MDSC 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 MDSC 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) and provides a platform for real-time algorithm integration and test. Other (MDSC) experiments explore areas including 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), and 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 2013	FY 2014	FY 2015
Title: Missile Defense Space Center (MDSC)	5.727	6.173	6.020
Articles:	-	-	-
<p>Description: The MDSC provides a central collaborative environment to develop, operate, exploit, and integrate Joint Space Capabilities for the Ballistic Missile Defense System (BMDS).</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Testing included SM-3 intercept using Space Tracking and Surveillance System Demonstration (STSS-D) Satellites as a remote sensor - STSS-D provided to an Aegis 4.0.2 ship the Quality of Service data track that initiated a Remote Engagement Authorized (REA) launch of a SM-3 Block IA against a Medium Range Ballistic Missile (MRBM) target - Continued maturation of the STSS-D and Near Field Infrared Experiment (NFIRE) satellite on-orbit operations - Participated 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 - 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 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. - Provided 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) - Continued to support laser communications experiments) to assess viability of the technology 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Continued to support Air Force Space Command and joint partners with Space Situational Awareness, Technical Intelligence, Battlespace Awareness, and Missile Warning</p> <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 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 Missile Defense Agency (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. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Support launch, integration, and operations of future Missile Defense Agency (MDA) space capabilities - Support Hardware-in-the Loop (HWIL) Engage-On Space Tracking & Surveillance System Demonstration (STSS-D) satellites tests and fulfill Overhead Persistent Infrared (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 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/kill assessment, and wideband infrared sensor data integration and exploitation - Conduct algorithm development, performance assessments, architecture assessments, and concept evaluations of future MDA space-layer options. - Provides future space-layer capability risk reduction through analysis, test and demonstration - Support Air Force Space Command and joint mission partners with Space Situational Awareness, technical intelligence, battlespace awareness, and missile warning 			
Accomplishments/Planned Programs Subtotals	5.727	6.173	6.020

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency									Date: March 2014		
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>				Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>			

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

Line Item	FY 2013	FY 2014	FY 2015	FY 2015	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Cost To	
			Base	OCO	Total					Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

Remarks

D. Acquisition Strategy

Functions and operations of the Missile Defense Space Center (MDSC) are currently financed through a 10-year MDSC 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 MDSC, providing customer support, while achieving efficiencies through approaches that exceed customer requirements.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>

<u>E. Performance Metrics</u> N/A

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency											Date: March 2014				
Appropriation/Budget Activity 0400 / 4						R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>					Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>				

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Defense Space Center (MDSC) - Contract Support Services (CSS)	C/Various	Various, MDA : CO/AL	2.466	1.262		0.372	Oct 2013	0.238	Oct 2014	-		0.238	Continuing	Continuing	Continuing
Missile Defense Space Center (MDSC) - MDA Civilian	Allot	MDA : Schriever AFB, CO	1.205	0.548		0.666	Oct 2013	0.707	Oct 2014	-		0.707	Continuing	Continuing	Continuing
Subtotal			3.671	1.810		1.038		0.945		-		0.945	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Defense Space Center (MDSC) - Mission Planning and Analysis	C/CPFF	Utah State University Space Dynamics Laboratory : UT	3.233	0.303		0.451	Nov 2013	0.454	Nov 2014	-		0.454	Continuing	Continuing	Continuing
Subtotal			3.233	0.303		0.451		0.454		-		0.454	-	-	-

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.

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Defense Space Center (MDSC) - MDSC Support (JRDC Services Contract)	SS/CPAF	NGIS : Schriever AFB, CO	24.954	3.267		4.066	Dec 2013	4.250	Dec 2014	-		4.250	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Missile Defense Space Center (MDSC) - MDSC/Enterprise Sensors Laboratory (ESL) Experiments	C/Various	Various : Various	6.195	0.347		0.618	Oct 2013	0.371	Oct 2014	-		0.371	Continuing	Continuing	Continuing
Subtotal			31.149	3.614		4.684		4.621		-		4.621	-	-	-

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	38.053	5.727	6.173	6.020	-	6.020	-	-	-

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

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013	▲																											
FTI-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	▲																											
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013	✦	✦	✦	✦																								
STSS Demonstration Satellites Operations - 1Q2013-4Q2013	✦	✦	✦	✦																								
MIS Operations - 1Q2013-4Q2013	✦	✦	✦	✦																								
MDSDC TIL Operations - 1Q2013-4Q2013	✦	✦	✦	✦																								
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2013			▲																									
FTM-20 (Aegis Intercept Flight Test)			▲																									
FTG-07 (GM Intercept Flight Test)			▲																									
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2013				▲																								
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)					▲																							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013						▲																						
FTM-21 (Aegis Intercept Flight Test)							▲																					
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014								▲																				
MDSC TIL Operations - 1Q2014-4Q2014									✦	✦	✦	✦																

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Mission Planning, Tasking and Analysis - 1Q2014-4Q2014					✦	✦	✦	✦																				
STSS Demonstration Satellites Operations - 1Q2014-4Q2014					✦	✦	✦	✦																				
MIS Operations - 1Q2014-4Q2014					✦	✦	✦	✦																				
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)					▲																							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014					△																							
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014						△																						
FTG-06b (GM Intercept Flight Test)								△																				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014								△																				
FTM-26 (AEGIS 5.0 Intercept Flight Test)									△																			
FTM-25 (AEGIS 5.0 Intercept Flight Test)									△																			
FTX-20 (AEGIS 5.0 Target Only Flight Test)									△																			
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015									△																			
MDSC TIL Operations - 1Q2015-4Q2015									✦	✦	✦	✦																
MIS Operations - 1Q2015-4Q2015									✦	✦	✦	✦																
Mission Planning, Tasking and Analysis - 1Q2015-4Q2015									✦	✦	✦	✦																
STSS Demonstration Satellites Operations - 1Q2015-4Q2015									✦	✦	✦	✦																

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015									△																			
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)									△																			
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)											△																	
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015											△																	
FTO-02 E1 (OTA Intercept Flight Test)											△																	
FTG-09 (GM Intercept Flight Test)											△																	
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015												△																
FTX-21 (AEGIS SBT Target Only Flight Test)												△																
FTO-02 E2 (OTA Intercept Flight Test)												△																
FTT-18 (TH Intercept Flight Test)												△																
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2019												△																
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016													△															
MDSC TIL Operations - 1Q2016-4Q2016													✦	✦	✦	✦												
MIS Operations - 1Q2016-4Q2016													✦	✦	✦	✦												
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016													✦	✦	✦	✦												
STSS Demonstration Satellites Operations - 1Q2016-4Q2016													✦	✦	✦	✦												
FTM-27 (AEGIS SBT Intercept Flight Test)													△															

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016													▲															
FTG-15 (GM Intercept Flight Test)													▲															
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016													▲															
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)													▲															
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)													▲															
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																	✦	✦	✦	✦								
MDSC TIL Operations - 1Q2017-4Q2017																	✦	✦	✦	✦								
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017																	✦	✦	✦	✦								
MIS Operations - 1Q2017-4Q2017																	✦	✦	✦	✦								
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2017																			▲									
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2017																				▲								

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2017																						▲						
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2018																						▲						
MDSC TIL Operations - 1Q2018-4Q2018																						✦	✦	✦	✦			
Mission Planning, Tasking and Analysis - 1Q2018-4Q2018																						✦	✦	✦	✦			
STSS Demonstration Satellites Operations - 1Q2018-4Q2018																						✦	✦	✦	✦			
MIS 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																								▲				
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2019																									▲			
MDSC TIL Operations - 1Q2019-4Q2019																									✦	✦	✦	✦
MIS Operations - 1Q2019-4Q2019																									✦	✦	✦	✦
STSS Demonstration Satellites Operations - 1Q2019-4Q2019																									✦	✦	✦	✦
Mission Planning, Tasking and Analysis - 1Q2019-4Q2019																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2013	1	2013	1	2013
FTI-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	1	2013	1	2013
Mission Planning, Tasking and Analysis - 1Q2013-4Q2013	1	2013	4	2013
STSS Demonstration Satellites Operations - 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-BMDS Flight Tests/Targets of Opportunity - 2Q2013	2	2013	2	2013
FTM-20 (Aegis Intercept Flight Test)	2	2013	2	2013
FTG-07 (GM Intercept Flight Test)	3	2013	3	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2013	3	2013	3	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2013	4	2013	4	2013
FTM-21 (Aegis Intercept Flight Test)	4	2013	4	2013
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2014	1	2014	1	2014
MDSC TIL 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
MIS Operations - 1Q2014-4Q2014	1	2014	4	2014
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)	2	2014	2	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2014	2	2014	2	2014
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2014	3	2014	3	2014
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2014	4	2014	4	2014
FTM-26 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015
FTM-25 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015
FTX-20 (AEGIS 5.0 Target Only Flight Test)	1	2015	1	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2015	1	2015	1	2015
MDSC TIL Operations - 1Q2015-4Q2015	1	2015	4	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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2015	2	2015	2	2015
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)	2	2015	2	2015
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2015	3	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2015	4	2015	4	2015
FTX-21 (AEGIS SBT Target Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 4Q2019	4	2015	4	2015
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2016	1	2016	1	2016
MDSC TIL Operations - 1Q2016-4Q2016	1	2016	4	2016
MIS Operations - 1Q2016-4Q2016	1	2016	4	2016
Mission Planning, Tasking and Analysis - 1Q2016-4Q2016	1	2016	4	2016
STSS Demonstration Satellites Operations - 1Q2016-4Q2016	1	2016	4	2016

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTM-27 (AEGIS SBT Intercept Flight Test)	2	2016	2	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2016	2	2016	2	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2016	3	2016	3	2016
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)	3	2016	3	2016
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)	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
MDSC TIL Operations - 1Q2017-4Q2017	1	2017	4	2017
Mission Planning, Tasking and Analysis - 1Q2017-4Q2017	1	2017	4	2017
MIS 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
MDSC TIL Operations - 1Q2018-4Q2018	1	2018	4	2018
Mission Planning, Tasking and Analysis - 1Q2018-4Q2018	1	2018	4	2018
STSS Demonstration Satellites Operations - 1Q2018-4Q2018	1	2018	4	2018
MIS 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
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 1Q2019	1	2019	1	2019
MDSC TIL Operations - 1Q2019-4Q2019	1	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD33 / <i>MD Space Exp Center (MDSEC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MIS Operations - 1Q2019-4Q2019	1	2019	4	2019
STSS Demonstration Satellites Operations - 1Q2019-4Q2019	1	2019	4	2019
Mission Planning, Tasking and Analysis - 1Q2019-4Q2019	1	2019	4	2019
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 2Q2019	2	2019	2	2019
STSS Demonstration Satellites-BMDS Flight Tests/Targets of Opportunity - 3Q2019	3	2019	3	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	0.250	0.342	0.369	-	0.369	0.417	0.456	0.504	0.548	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	0.250	0.342	0.369
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	0.250	0.342	0.369

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603895C / <i>Ballistic Missile Defense System Space Programs</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	C/CPAF	Various : Multi: AL, CA, CO, VA	0.000	0.250		0.342	Jun 2014	0.369	Jun 2015	-		0.369	Continuing	Continuing	Continuing
Subtotal			0.000	0.250		0.342		0.369		-		0.369	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.250	0.342	0.369	-	0.369	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C <i>I Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	635.123	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	577.550	206.874	232.170	269.921	-	269.921	273.114	275.395	260.852	283.287	Continuing	Continuing
MC01: <i>Cyber Operations</i>	-	-	0.538	0.547	-	0.547	0.556	0.573	0.583	0.600	Continuing	Continuing
MT01: <i>C2BMC Test</i>	-	41.520	54.252	56.237	-	56.237	57.401	52.582	59.577	45.960	Continuing	Continuing
MX01: <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	45.024	79.068	96.208	91.111	-	91.111	98.293	104.913	101.175	102.539	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	12.549	16.969	22.151	25.668	-	25.668	26.818	29.062	30.750	33.252	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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.

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 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.

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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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.

This Program Element includes support for the Discrimination Improvements for Homeland Defense (DIHD) effort. The goal of this effort is to develop and field an integrated set of Element capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle with a high degree of confidence that will improve Warfighter shot doctrine and preserve inventory. This effort will encompass a DIHD Near-Term capability fielding and a DIHD Mid-Term capability fielding

The 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	366.552	418.355	433.470	-	433.470
Current President's Budget	344.431	405.319	443.484	-	443.484
Total Adjustments	-22.121	-13.036	10.014	-	10.014
• Congressional General Reductions	-0.476	-0.196			
• Congressional Directed Reductions	-6.000	-12.840			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	17.239	-			
• SBIR/STTR Transfer	-4.306	-			
• Other Adjustment	-28.578	-	10.014	-	10.014

Change Summary Explanation

FY 2015 increase of \$10.014 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD01: <i>Command & Control, Battle Management, Communications (C2BMC)</i>	577.550	206.874	232.170	269.921	-	269.921	273.114	275.395	260.852	283.287	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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.

The Discrimination Improvements for Homeland Defense (DIHD) effort will develop and field integrated Element capabilities to improve BMD System ability to identify lethal and non-lethal objects. Command Control Battle Management and Communications will update C2BMC sensor tasking to support the capabilities of the Near-term phase, mature advanced discrimination and battle management techniques in support of the Mid-term capability, and conduct element and system level testing to support Near, and Mid-term phases.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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
- 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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- 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

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 2013	FY 2014	FY 2015
Title: Spiral Development	164.325	182.821	205.743
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
- Continued Spiral 8.2 engineering and design and Ballistic Missile Defense (BMD) Planner, Situational Awareness, Global Engagement Manager (GEM), and BMD Communications Network software development, coding, and integration			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Updated 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 - 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 - Acquired and installed Enterprise Work Stations (EWS), web browsers, and BMD Planners - Continued Cyber Net Defense (CND) requirements for EPAA Phases 1 and 2 - Completed BMDS Overhead Persistent Infrared Architecture (BOA) Critical Design Review (CDR) and began a Dynamic Behavior Study to support the C2BMC - BOA Interface Control Document (ICD). - Developed the initial Ballistic Missile Defense System (BMDS) C2BMC Model for Spiral 8.2 - Continued development of Spiral 8.2 software, hardware, and network capability - Designed, procured, and integrated 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 - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP). - Completed development and fielding of new Spiral 6.4 maintenance release to support warfighter improvements - Delivered Spiral 8.2 prototype of the Two-Factor Authentication (Smart-card) capability on the C2BMC architecture. 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. - Finalized the C2BMC Command and Control (C2) and battle management architecture, including Enhanced C2BMC advanced technologies, to fulfill the European Phase Adaptive Approach (EPAA) 3 Architecture - Completed requirements allocation and specification for advanced C2BMC technologies to support EPAA Phase 3 requirements - Completed a North Atlantic Treaty Organization (NATO) Capability 2 Architecture Design - Completed NATO Capability 2 Interface Control Documents (ICDs) <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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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 Persistent Infrared 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. - Initiate C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - Continue to document international interfaces and traceability to BMDS requirements - Initiate EPAA 2 situational awareness displays IAW bi-lateral agreements - 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 or later release, and Engage on Remote support with Aegis 5.1. Task initiated in FY 2013 and scheduled for completion to support GTX-07b (FY 2018). - Deliver a C2BMC Deployable Interface Node (CDIN) in support of a second forward based AN/TPY-2 deployment to PACOM. <p>FY 2015 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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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). - Continue development and testing of new BMDS Overhead Persistent Infrared 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 develop the Two-Factor Authentication (Smart-card) capability on a classified weapon 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. - Continue to document international interfaces and traceability to BMDS requirements - Continue EPAA Phase 2 situational awareness displays project IAW bi-lateral agreements - Initiate C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - 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 release (6.1 or later), and Engage on Remote support with Aegis 5.1. - Continue requirements allocation and specification for advanced C2BMC technologies to exploit space-based data - Continue site planning, scheduling and hardware acquisition to support planned FY 2017 deployment of C2BMC S8.2 capability. - Complete Discrimination Improvements for Homeland Defense (DIHD) Near-term capability development and Element-level testing of BMDS sensor management improvements in the Command, Controls, Battle Management and Communications. - Complete integration phase of DIHD Near-term testing via GTI-06. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Conduct data collection and analysis for final assessment of discrimination technology candidates planned for DIHD Mid-term improvements. - Continue system maturation and performance characterization of the Simultaneous Correlation of Unambiguous Tracks (SCOUT) Algorithm and the Advanced SCOUT Prototype (ASP) node, a selected component of the MDA initiative for Mid-Term DIHD initiated in FY14 within PE 06031719C, Advanced C4ISR. 			
<p>Title: C2BMC Experimentation Lab (X-Lab)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: The C2BMC Experimentation Lab (X-Lab) focused on prototyping, demonstrating, and analyzing new C2BMC capabilities that will enable (1) status reporting and tasking of Ballistic Missile Defense System (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 was:</p> <ul style="list-style-type: none"> - Tasking of Aegis, Terminal High Altitude Area Defense (THAAD), and infrared sensors through cues from space based assets and other BMDS assets: Spirals 6.4 and 8.2 - Demonstrating the communications, concept of operations (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 <p>FY 2014 Plans: The C2BMC Experimentation Lab (X-Lab) prototypes and demonstrates new C2BMC capabilities. The FY 2014 focus will be:</p>	12.199 -	4.733 -	6.416 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-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)</p> <p>- 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</p> <p>- Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development process</p> <p>FY 2015 Plans: The C2BMC Experimentation Lab (X-Lab) prototypes and demonstrates new C2BMC capabilities. The FY 2015 focus will be:</p> <p>-Demonstrate 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)</p> <p>- Evaluate 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, increase battlespace for Homeland Defense, and decrease C2BMC sustainment costs</p> <p>- Characterize the performance of engineering releases of C2BMC Spiral 8.2 to mitigate risks early in the development and integration processes</p> <p>Advanced C4ISR technology products completed in FY2014 will transition to C2BMC and Sensors Program Elements. The Agency will continue to investigate enabling technology for the integration of the Services command and sensor networks into the Ballistic Missile Defense System (BMDS) in the C2BMC Program Element.</p>			
<p>Title: C2BMC Communications</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>- Provided Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services</p> <p>- Continued support for C2BMC 6.4 in European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM)</p> <p>- Continued development and deployment of C2BMC Deployable Interface Nodes (CDINs) (C2BMC Element funded software capability and project management; Sensors Element funded hardware, installation, and checkout)</p>	30.350 -	39.223 -	42.859 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests, wargames, and exercises in accordance with the Ballistic Missile Defense System (BMDS) Integrated Master Test Plan (IMTP) - Resolved real-time operational issues through the C2BMC Control Center and BMDS Network Operations and Security Center (BNOSC) - Operated BNOSC 24 hours a day, 7 days a week, 365 days a year - Provided global BMDS communications via leased Defense Information Services 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 - Provided support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Acquired and installed 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, Modernization Enterprise Terminal #1 (MET#1), at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - 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) and associated Long Haul Communications Transport (LHCT) in support of 2nd Radar deployment to Japan. - 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)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit - Provide SME support to fielded C2BMC locations to ensure continued performance and operations - Provide sustaining engineering support for fielded network equipment - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations - Upgrade LHCT services at AN/TPY-2 locations in CENTCOM and EUCOM to provide redundant and diverse paths 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Design and implement changes at all four Maritime Operations Centers (MOCs), to accommodate changes to the Navy's Automated Digital Network System (ADNS) INC III</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Provide Ground-Based Midcourse Defense (GMD) Communications Network (GCN) Long Haul Communications Transport (LHCT) Services - Continue engineering support to AN/GSC-52B SATCOM terminal, Modernization Enterprise Terminal (MET), at Ramstein AFB for connectivity via Indian Ocean Defense Satellite Communication System (DSCS) - Continue network and communications support for C2BMC 6.4 in the European Command (EUCOM), Strategic Command (STRATCOM), Northern Command (NORTHCOM), Pacific Command (PACOM), and Central Command (CENTCOM) - Continue engineering and deployment support 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)) - Provide global BMDS communications via leased Defense Information Systems Agency (DISA) circuit - Provide SME support to fielded C2BMC locations to ensure continued performance and operations - Provide sustaining engineering support for fielded network equipment - Provide support of AN/TPY-2 radar communications nodes to ensure continued performance and operations including installation of new AN/TPY-2 radar communications node at a site in Japan and installation and support of AN/GSC-52B SATCOM terminals, Modernization of Enterprise Terminal-Transportable (MET-T), at a site in Japan - Acquisition of network circuits to support planned FY 2017 S8.2 capability deployment - Fielding of protected Anti-Jam (AJ) /Anti-Scintillation (AS) Wideband Network System (PAAWNS) to missile defense locations worldwide - Install improved LHCT at 2nd AN/TPY-2 radar location in Japan 			
<p>Title: Enterprise Sensors Lab (ESL)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p>	-	5.393	14.903
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
FY 2013 Accomplishments 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			
<i>FY 2015 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. - Incorporate the Space Based Infra-Red System (SBIRS) Geosynchronous Earth Orbit Scanner Wideband Data and other new Overhead Persistent Infra-Red (OPIR) sensors data feeds to form a more accurate 3-D track - Demonstrate joint Infrared/Radio Frequency algorithms in playbacks of prior flight test to assess sensor data fusion of multiple systems with improved efficiency and reduced maintenance costs - Enhance prototype algorithms to extract dimmer targets from sensor data to extend the length of the track and enable additional sensor cueing opportunities			
Accomplishments/Planned Programs Subtotals	206.874	232.170	269.921

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

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 capability development.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>

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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency											Date: March 2014				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>						

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Spiral Development - BOA Development	SS/CPAF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		-		6.573	Oct 2014	-		6.573	Continuing	Continuing	Continuing
Spiral Development - C2BMC Hardware/ Software Development, Integration & Test (I&T)	SS/IDIQ	Lockheed Martin Team : Arlington, VA	117.929	108.411		99.750	Dec 2013	120.091		-		120.091	Continuing	Continuing	Continuing
Spiral Development - C2BMC Integration	Various	Services DISA Agency : -	125.047	2.713		19.789	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Spiral Development - C2BMC Mid-Term DIHD-SCOUT	SS/CPFF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		-		16.300	Oct 2014	-		16.300	Continuing	Continuing	Continuing
Spiral Development - C2BMC Mid-Term DIHD-SCOUT OGA	MIPR	Aviation and Missile Research Development and Engineering Center : Huntsville, AL	0.000	-		-		1.200	Oct 2014	-		1.200	Continuing	Continuing	Continuing
Spiral Development - Contract Support Services	SS/FFP	Cobham Analytic Solutions, Paradigm, CACI, CSC : Arlington, VA/ Huntsville, AL	132.689	23.774		24.338	Oct 2013	22.561		-		22.561	Continuing	Continuing	Continuing
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	78.487	14.222		16.140	Oct 2013	16.470		-		16.470	Continuing	Continuing	Continuing
Spiral Development - MDA Civilian, Travel & PCS	Various	- : Arlington, VA/ Huntsville, AL/	44.778	15.205		22.804	Oct 2013	22.548		-		22.548	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Colorado Springs, CO													
C2BMC Experimentation Lab (X-Lab) - X-Lab	SS/CPAF	Various / Northrop Grumman Mission Systems : Colorado Springs, CO	19.209	12.199		4.733	Oct 2013	6.416		-		6.416	Continuing	Continuing	Continuing
C2BMC Communications - BNOSC	SS/CPAF	Lockheed Martin Team / JRDC : Colorado Springs, CO	6.761	6.406		3.224	Oct 2013	3.353		-		3.353	Continuing	Continuing	Continuing
C2BMC Communications - Communication Equipment and Fielding	SS/CR	DISA, PMDCATS, SPAWAR : Various	39.980	16.051		25.250	Oct 2013	28.988		-		28.988	Continuing	Continuing	Continuing
C2BMC Communications - Communication Leases	SS/CR	DISA : Arlington, VA	6.200	6.143		8.949	Oct 2013	7.993		-		7.993	Continuing	Continuing	Continuing
C2BMC Communications - EUCOM Communications	MIPR	USAFE : Ramstein, DE	6.470	1.750		1.800	Oct 2013	2.525		-		2.525	Continuing	Continuing	Continuing
Enterprise Sensors Lab (ESL) - Enterprise Sensor Lab	SS/CPAF	Northrop Grumman Space and Mission Systems : Colorado Springs, CO	0.000	-		5.393	Oct 2013	14.903		-		14.903	Continuing	Continuing	Continuing
Subtotal			577.550	206.874		232.170		269.921		-		269.921	-	-	-

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).

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

Remarks
N/A

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

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 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	577.550	206.874	232.170	269.921	-	269.921	-	-	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD01 / <i>Command & Control, Battle Management, Communications (C2BMC)</i>
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
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Remarks
 Funding in the All Prior Years column represents a summary of Prior Years Total Costs for active contracts, Military Interdepartmental Purchase Requests, and civilian salaries on the R-3.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC01: <i>Cyber Operations</i>	-	-	0.538	0.547	-	0.547	0.556	0.573	0.583	0.600	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Network/System Certification and Accreditation (C&A)	-	0.538	0.547
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: -Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MC01 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems.</p> <p>-Develop C2BMC DIACAP certification and accreditation packages.</p> <p>-Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.</p> <p>-Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls.</p> <p>FY 2015 Plans:</p> <p>-Conduct cyber security / information assurance engineering and architecture planning for C2BMC information technology systems.</p> <p>-Plan and test the IA controls for Ballistic Missile Defense System (BMDS) C2BMC systems.</p> <p>-Develop C2BMC DIACAP certification and accreditation packages.</p> <p>-Conduct Controls Validation Testing (CVT) of C2BMC mission systems and provide Plan of Action and Milestones to mitigate information assurance deficiencies.</p> <p>-Conduct annual information assurance reviews on the C2BMC enclaves to assess compliance in implementing and maintaining IA controls.</p>			
Accomplishments/Planned Programs Subtotals	-	0.538	0.547

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

N/A

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

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

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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 capability development. 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

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency											Date: March 2014				
Appropriation/Budget Activity 0400 / 4				R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>					Project (Number/Name) MC01 / <i>Cyber Operations</i>						

Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Network/System Certification and Accreditation (C&A) - IA/ CND Network/System C&A	C/CPFF	Torch Technologies : Various	0.000	-		0.538	Jul 2014	0.547		-		0.547	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.538		0.547		-		0.547	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.538	0.547	-	0.547	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT01: <i>C2BMC Test</i>	-	41.520	54.252	56.237	-	56.237	57.401	52.582	59.577	45.960	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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 will support system flight and ground testing, and wargames and exercises as detailed in the MDA Integrated Master Test Plan (IMTP).

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

	FY 2013	FY 2014	FY 2015
Title: Integrated Master Test Plan	41.520	54.252	56.237
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
<ul style="list-style-type: none"> - Participated in and analyzed results of ground and flight tests (including FTG-07, FTM-20, and FTO-01), wargames, and exercises in accordance with the Ballistic Missile Defense System (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 -- Provided infrastructure, network, and troubleshooting support to: <ul style="list-style-type: none"> -- C2BMC Control Center (CCC) -- System Test and Operations Center (STOC) -- Ballistic Missile Defense System (BMDS) Communications Network (BCN) -- BMDS Network Operations and Security Center (BNOSC) -- Distributed Multi-Echelon Distributed Training system (DMETS) 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Continued BMD Overhead Persistent Infra-Red (OPIR) Architecture (BOA) performance assessments, integration, and testing - Conducted concept development test for virtualized C2BMC services, service oriented architectures - Conducted North Atlantic Treaty Organization (NATO) Multi-National Ensemble Test #3- Conducted Exercise Rapid Arrow 2013 German Live Fire Event <p>FY 2014 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 and Central Command Deployments - Support European Phased Adaptive Approach (EPAA) Phase 2-3 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) -- Distributed Multi-Echelon Distributed Training system (DMETS) -- Distributed Training system (DTS) - Complete build-out of Spiral 8.2 Testbed in preparation for Verification Testing - 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 - Complete build-out for Cyber Testing in the C2BMC Testbed (CTB) <p>Enterprise Sensors Laboratory (ESL):</p> <ul style="list-style-type: none"> -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. -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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>

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

	FY 2013	FY 2014	FY 2015
<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> <ul style="list-style-type: none"> - 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. -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. -Host and test Spiral 8.2 engineering releases -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>FY 2015 Plans:</p> <p>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 2-3 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) -- Distributed Multi-Echelon Distributed Training system (DMETS) Infrastructure -- Distributed Training system (DTS) 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Complete build-out of Spiral 8.2 Testbed for IMTP scheduled events - Continue C2BMC and NATO planning demonstrations - Continue to support NATO live fire events - Continue development and upgrades for Cyber Testing in the C2BMC Testbed (CTB) <p>Enterprise Sensors Laboratory (ESL):</p> <ul style="list-style-type: none"> -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. -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 (SBIRS) Geosynchronous Earth Orbit Scanner Wideband and other new Overhead Persistent Infra-Red (OPIR) sensor data feeds -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. -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. -Compile and provide test and demonstration results back to the algorithms development activity in Project MD01 to enable algorithm refinement <p>C2BMC Experimentation Lab (X-Lab):</p> <ul style="list-style-type: none"> - 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. -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. -Host and test Spiral 8.2 engineering releases -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>Wargames</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Participate in and analyze results of ground and flight tests, wargames, and exercises in accordance with the BMDS Integrated Master Test Plan (IMTP)			
Program, Planning & Operations M&S participation in System Test Events -Support and analyze models and simulation in accordance with the BMDS IMTP Integrated Master Assessment Plan (IMAP): - Continue development of Spiral 8.2 assessment requirements (Assessment Objectives, Assessment Sub-Objectives, and Critical Assessment Conditions) to capture engineering, test, and analysis data to support S8.2 Technical Capability Declaration, and drive BMDS system test objectives and test resourcing in the BMDS Integrated Master Test Plan (IMTP).			
Accomplishments/Planned Programs Subtotals	41.520	54.252	56.237

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

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 capability development. 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks

N/A

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

Remarks

N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure	SS/CPAF	Northrop-Grumman Corporation : Colorado Springs, CO	0.000	-		1.100	Oct 2013	5.435		-		5.435	Continuing	Continuing	Continuing
Integrated Master Test Plan - Enterprise Sensors Lab Infrastructure Support	MIPR	Various : VA; OH; AL; NM; CA	0.000	-		4.570	Oct 2013	-		-		-	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	12.899		19.909	Dec 2013	24.848		-		24.848	Continuing	Continuing	Continuing
Integrated Master Test Plan - Integrated Master	SS/CPAF	Northrop-Grumman Corporation :	0.000	28.621		28.673	Oct 2013	25.954		-		25.954	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Test Plan BMDS level Testing (Element/System Test Lab Facilities)		Colorado Springs, CO													
Subtotal			0.000	41.520		54.252		56.237		-		56.237	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	41.520	54.252	56.237	-	56.237	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTI-04e Part 1 (BMDS Ground Test)	+																											
GT-206 (Glory Trip)	▲																											
FTP-07 (Patriot Flight Test)	▲																											
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											
GM CTV-01 (GM Non Intercept Flight Test)		▲																										
FTM-20 (Aegis Intercept Flight Test)		▲																										
Fast Eagle Inc 2		▲																										
Fast Assurance		▲																										
GT-207 (Glory Trip)			▲																									
FTM-19 (Aegis Intercept Flight Test)			▲																									
FTP-08 (Patriot Flight Test)			▲																									
Fast Aim			▲																									
FTG-07 (GM Intercept Flight Test)			▲																									
FTM-22 (Aegis Intercept Flight Test)			▲																									
GTI-04e Part 1a (BMDS Ground Test)				+																								
FTM-21 (Aegis Intercept Flight Test)				▲																								
GT-209 (Glory Trip)				▲																								
GT-208-1 (Glory Trip)				▲																								
FTO-01 (Operational Test)				▲																								
Install Spiral 8.2 Mission Node - Ground Test					+	+																						
Install Spiral 8.2 Management Node - C2BMC Testbed						+	+	+																				
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed							+	+	+																			
Warfighter TP 04e (BMDS Ground Test)								☆																				
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)							▲																					
Fast Phoenix (BMDS Ground Test)								+																				

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency

Date: March 2014

Appropriation/Budget Activity
0400 / 4

R-1 Program Element (Number/Name)
PE 0603896C / *Ballistic Missile Defense Command and Control, Battle Management & Communication*

Project (Number/Name)
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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SCD PTV-01 (Aegis SCD Intercept Only Flight Test)				△																								
Israeli Cooperative Intercept Flight Test - FY 2014					✦	✦	✦	✦																				
GTD-04e Part 2 (BMDS Ground Test)					✦	✦	✦	✦	✦	✦																		
FTX-18 (Aegis 4.0.2 Target Only Flight Test)					△																							
GTI-04e Part 2 (BMDS Ground Test)					✦	✦																						
GDEx 06 Part 1 (BMDS Ground Test)						✦																						
AA CTV-01 (Aegis AA Intercept Only Flight Test)						△																						
Fast Falcon (BMDS Ground Test)								✦																				
FTG-06b (GM Intercept Flight Test)								▲																				
Fast Osprey (BMDS Ground Test)								✦																				
FTX-20 (Aegis 5.0 Target Only Flight Test)									△																			
FTM-25 (Aegis 5.0 Intercept Flight Test)									△																			
FTM-26 (Aegis 5.0 Intercept Flight Test)									△																			
Israeli Cooperative Intercept Flight Test - FY 2015									✦	✦	✦	✦																
FTP-09 (8-3) (LTPO Intercept Flight Test)									△																			
FTX-19 (Aegis 4.0.2 Target Only Flight Test)									△																			
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)									△																			
GTI-06 Part 1 (BMDS Ground Test)									✦	✦																		
FTM-24 (Aegis 4.0.2 Intercept Flight Test)									△																			
FTO-02 E1 (OTA Intercept Flight Test)									△																			
FTP-10 (8-4) (LTPO Intercept Flight Test)									△																			
GDEx 06 Part 2 (BMDS Ground Test)									✦																			

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTG-09 (GM Intercept Flight Test)											▲																	
FTX-21 (Aegis SBT Target Only Flight Test)											▲																	
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)											▲																	
FTO-02 E2 (OTA Intercept Flight Test)											▲																	
GTI-06 Part 2 (BMDS Ground Test)											✦																	
FTT-18 (TH Intercept Flight Test)											▲																	
GTD-06 Part 3 (BMDS Ground Test)											✦																	
FTP-11 (8-OT2) (LTPO Intercept Flight Test)											▲																	
FTP-12 (8-OT3) (LTPO Intercept Flight Test)											▲																	
FTP-13 (8-OT4) (LTPO Intercept Flight Test)											▲																	
GTD-06 Part 1a (BMDS Ground Test)											✦																	
Warfighter TP 06 (BMDS Ground Test)											✦																	
Israeli Cooperative Intercept Flight Test - FY 2016															✦	✦	✦	✦										
FTM-27 (Aegis SBT Intercept Flight Test)															▲													
GTD-06 Part 2 (BMDS Ground Test)															✦	✦												
GTD-06 Part 1b (BMDS Ground Test)															✦													
SFTM-01 E2 (Aegis 5.1 Intercept Only Flight Test)															▲													
FTG-15 (GM Intercept Flight Test)															▲													
SFTM-01 E1 (Aegis 5.1 Target Only Flight Test)															▲													
GTX-07a (BMDS Ground Test)																												✦
GDEx 07a (BMDS Ground Test)																												✦
GTI-07a (BMDS Ground Test)																												✦

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SFTM-02 (Aegis 5.1 Intercept Flight Test)																												
FTX-24 (Aegis SBT Target Only Flight Test)																												
Israeli Cooperative Intercept Flight Test - FY 2017																												
FTT-15 (THAAD Intercept Flight Test)																												
Warfighter TP 07a (BMDS Ground Test)																												
GDEx 07b (BMDS Ground Test)																												
GTD-07a Part 2 (BMDS Ground Test)																												
Spiral 8.2 EUCOM Capability Declaration																												
Spiral 8.2 NORTHCOM/PACOM Capability Declaration																												
FTG-13 (OTA Intercept Flight Test)																												
FTX-22 (SN Target Only Flight Test)																												
GTD-07a Part 1 (BMDS Ground Test)																												
FTM-28 (Aegis SBT Intercept Flight Test)																												
Spiral 8.2 CENTCOM Capability Declaration																												
GTX-07b (BMDS Ground Test)																												
FTM-31 (Aegis SBT Intercept Flight Test)																												
GM CTV-03 (GM Intercept Only Flight Test)																												
FTM-29 (Aegis 5.0 Intercept Flight Test)																												
Israeli Cooperative Intercept Flight Test - FY 2018																												
FTO-03 E2 (OTA Intercept Flight Test)																												
GDEx 07b Part 2 (BMDS Ground Test)																												
FTM-33 (Aegis SBT Intercept Flight Test)																												
FTM-32 (Aegis SBT Intercept Flight Test)																												
PA-07b (BMDS Ground Test)																												
GTI-07b (BMDS Ground Test)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
GTD-07b Part 2 (BMDS Ground Test)																								✦					
FTG-11 (GM Intercept Flight Test)																								△					
FTO-03 E3 (OTA Intercept Flight Test)																								△					
Warfighter TP 07b (BMDS Ground Test)																								✦	✦				
GTD-07b Part 1 (BMDS Ground Test)																								✦	✦				
GTX-08 Part 1 (BMDS Ground Test)																								✦	✦				
GDEx 08 Part 1 (BMDS Ground Test)																								✦	✦				
FTG-17 (GM Intercept Flight Test)																													△
GTX-08 Part 2 (BMDS Ground Test)																													✦
FTM-35 (AEGIS 5.0 Intercept Flight Test)																													△
FTX-23 (AEGIS 5.0 Target Only Flight Test)																													△

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

Events	Start		End	
	Quarter	Year	Quarter	Year
GTI-04e Part 1 (BMDS Ground Test)	1	2013	1	2013
GT-206 (Glory Trip)	1	2013	1	2013
FTP-07 (Patriot Flight Test)	1	2013	1	2013
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GM CTV-01 (GM Non Intercept Flight Test)	2	2013	2	2013
FTM-20 (Aegis Intercept Flight Test)	2	2013	2	2013
Fast Eagle Inc 2	2	2013	2	2013
Fast Assurance	2	2013	2	2013
GT-207 (Glory Trip)	3	2013	3	2013
FTM-19 (Aegis Intercept Flight Test)	3	2013	3	2013
FTP-08 (Patriot Flight Test)	3	2013	3	2013
Fast Aim	4	2013	4	2013
FTG-07 (GM Intercept Flight Test)	4	2013	4	2013
FTM-22 (Aegis Intercept Flight Test)	4	2013	4	2013
GTI-04e Part 1a (BMDS Ground Test)	4	2013	4	2013
FTM-21 (Aegis Intercept Flight Test)	4	2013	4	2013
GT-209 (Glory Trip)	4	2013	4	2013
GT-208-1 (Glory Trip)	4	2013	4	2013
FTO-01 (Operational Test)	4	2013	4	2013
Install Spiral 8.2 Mission Node - Ground Test	4	2013	1	2014
Install Spiral 8.2 Management Node - C2BMC Testbed	4	2013	2	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MT01 / <i>C2BMC Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Install Spiral 8.2 Mission Nodes (2) - C2BMC Testbed	4	2013	2	2014
Install Spiral 8.2 Element and User Gateway Nodes (5) - C2BMC Testbed	4	2013	2	2014
Warfighter TP 04e (BMDS Ground Test)	1	2014	1	2014
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)	1	2014	1	2014
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
SCD PTV-01 (Aegis SCD Intercept Only Flight Test)	1	2014	1	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2015
FTX-18 (Aegis 4.0.2 Target Only Flight Test)	2	2014	2	2014
GTI-04e Part 2 (BMDS Ground Test)	2	2014	3	2014
GDEx 06 Part 1 (BMDS Ground Test)	3	2014	3	2014
AA CTV-01 (Aegis AA Intercept Only Flight Test)	3	2014	3	2014
Fast Falcon (BMDS Ground Test)	4	2014	4	2014
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014
Fast Osprey (BMDS Ground Test)	4	2014	4	2014
FTX-20 (Aegis 5.0 Target Only Flight Test)	1	2015	1	2015
FTM-25 (Aegis 5.0 Intercept Flight Test)	1	2015	1	2015
FTM-26 (Aegis 5.0 Intercept Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
FTP-09 (8-3) (LTPO Intercept Flight Test)	2	2015	2	2015
FTX-19 (Aegis 4.0.2 Target Only Flight Test)	2	2015	2	2015
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)	2	2015	2	2015
GTI-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
FTM-24 (Aegis 4.0.2 Intercept Flight Test)	3	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015

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

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTP-10 (8-4) (LTPO Intercept Flight Test)	3	2015	3	2015
GDEx 06 Part 2 (BMDS Ground Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
FTX-21 (Aegis SBT Target Only Flight Test)	4	2015	4	2015
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
GTD-06 Part 3 (BMDS Ground Test)	1	2016	1	2016
FTP-11 (8-OT2) (LTPO Intercept Flight Test)	1	2016	1	2016
FTP-12 (8-OT3) (LTPO Intercept Flight Test)	1	2016	1	2016
FTP-13 (8-OT4) (LTPO Intercept Flight Test)	1	2016	1	2016
GTD-06 Part 1a (BMDS Ground Test)	1	2016	1	2016
Warfighter TP 06 (BMDS Ground Test)	1	2016	1	2016
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
FTM-27 (Aegis SBT Intercept Flight Test)	2	2016	2	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
GTD-06 Part 1b (BMDS Ground Test)	3	2016	3	2016
SFTM-01 E2 (Aegis 5.1 Intercept Only Flight Test)	3	2016	3	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
SFTM-01 E1 (Aegis 5.1 Target Only Flight Test)	3	2016	3	2016
GTX-07a (BMDS Ground Test)	4	2016	4	2016
GDEx 07a (BMDS Ground Test)	4	2016	4	2016
GTI-07a (BMDS Ground Test)	1	2017	1	2017
SFTM-02 (Aegis 5.1 Intercept Flight Test)	1	2017	1	2017

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTX-24 (Aegis SBT Target Only Flight Test)	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017
FTT-15 (THAAD Intercept Flight Test)	2	2017	2	2017
Warfighter TP 07a (BMDS Ground Test)	3	2017	3	2017
GDEx 07b (BMDS Ground Test)	3	2017	3	2017
GTD-07a Part 2 (BMDS Ground Test)	3	2017	3	2017
Spiral 8.2 EUCOM Capability Declaration	3	2017	3	2017
Spiral 8.2 NORTHCOM/PACOM Capability Declaration	3	2017	3	2017
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
FTX-22 (SN Target Only Flight Test)	3	2017	3	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
FTM-28 (Aegis SBT Intercept Flight Test)	3	2017	3	2017
Spiral 8.2 CENTCOM Capability Declaration	4	2017	4	2017
GTX-07b (BMDS Ground Test)	1	2018	1	2018
FTM-31 (Aegis SBT Intercept Flight Test)	1	2018	1	2018
GM CTV-03 (GM Intercept Only Flight Test)	1	2018	1	2018
FTM-29 (Aegis 5.0 Intercept Flight Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
FTO-03 E2 (OTA Intercept Flight Test)	3	2018	3	2018
GDEx 07b Part 2 (BMDS Ground Test)	3	2018	3	2018
FTM-33 (Aegis SBT Intercept Flight Test)	3	2018	3	2018
FTM-32 (Aegis SBT Intercept Flight Test)	3	2018	3	2018
PA-07b (BMDS Ground Test)	3	2018	4	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	4	2018	4	2018

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Events	Start		End	
	Quarter	Year	Quarter	Year
FTG-11 (GM Intercept Flight Test)	4	2018	4	2018
FTO-03 E3 (OTA Intercept Flight Test)	4	2018	4	2018
Warfighter TP 07b (BMDS Ground Test)	1	2019	2	2019
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
GTX-08 Part 1 (BMDS Ground Test)	3	2019	3	2019
GDEx 08 Part 1 (BMDS Ground Test)	3	2019	3	2019
FTG-17 (GM Intercept Flight Test)	3	2019	3	2019
GTX-08 Part 2 (BMDS Ground Test)	4	2019	4	2019
FTM-35 (AEGIS 5.0 Intercept Flight Test)	4	2019	4	2019
FTX-23 (AEGIS 5.0 Target Only Flight Test)	4	2019	4	2019
GTI-08 (BMDS Ground Test)	2	2020	3	2020
FTO-03 E1 (Strat) (OTA Intercept Flight Test)	3	2020	3	2020
GDEx 08 Part 2 (BMDS Ground Test)	3	2020	3	2020
FTX-26 (LRDR/CLEAR) (SN Target Only Flight Test)	3	2020	3	2020
FTM-34 (AEGIS 5.0 Intercept Flight Test)	3	2020	3	2020
GTD-08 Part 1 (BMDS Ground Test)	4	2020	4	2020
FTM-30 (AEGIS 5.0 Intercept Flight Test)	4	2020	4	2020
FTT-16 (TH Intercept Flight Test)	4	2020	4	2020

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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
<i>MX01: Command & Control, Battle Management, Communications (C2BMC) Development Support</i>	45.024	79.068	96.208	91.111	-	91.111	98.293	104.913	101.175	102.539	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

Off-site support provides:

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- 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 2013	FY 2014	FY 2015
Title: Operations and Support	60.699	74.684	70.018
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
- Maintained C2BMC training suites			
- Sustained Global Engagement Manager (GEM) trainers			
- Developed curriculum for and train operators, maintenance personnel, and testers			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Resolved 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 - Provided global BMDS communications via leased Defense Information Systems Agency (DISA) circuit lines - Provided and support 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 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 Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) at 5 deployed operational test sites - Support Host Nation operations, demonstrations, and tests - Provided sustainment training/skills proficiency to C2BMC operations - Upgraded and maintained computer network defense and network monitoring in the BNOSC - Operated the BNOSC 24 hours a day, 7 days a week, 365 days a year - Provided support/sustainment for C2BMC installations - 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 - 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 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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<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 operations support of Army Navy/Ground Transportable Radar Surveillance model 2 (AN/TPY-2) radar communications nodes - Provide operations and sustainment personnel to support test and special operations for AN/TPY-2 at 5 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 - Plan, engineer, deploy, and sustain C2BMC Deployable Interface Node (CDIN) (and all other required network communications equipment, and shelters) to support the deployment of an AN/TPY-02 Radar to the second site in PACOM <p>FY 2015 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 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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, GE; 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 - Provide engineering support to the SBIRS Increment 2 interface to ensure continued communications between the BMDS and GMD 			
<p>Title: Concurrent, Test, Training, and Operations (CTTO)</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: Operated and Sustained C2BMC Spiral 6.4 Tri-Node (Tri-Node includes Pacific Command (PACOM), Northern Command (NORTHCOM), and Strategic Command (STRATCOM)) Distributed Training System (DTS) system. Distributed Training System Tri-Node was formerly known as the Distributed Multi-Echelon Training System (DMETS). - Operated and Sustained C2BMC Spiral 6.4 European Command (EUCOM) and Central Command (CENTCOM) Distributed Training System (DTS). - Continued providing Ballistic Missile Defense (BMD) training events across the Unified Combatant Commands while maintaining the existing architecture. - Monitored and coordinated the execution of Agency Modeling and Simulation development efforts; key dependencies for the successful execution of Concurrent, Test, Training, and Operations (CTTO). - Continued Development of C2BMC Spiral 8.2 Training Systems.</p> <p>FY 2014 Plans:</p>	18.369 -	21.524 -	21.093 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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 Space Missile Defense Command, C2BMC Sensor Manager Training Facility and to Strategic Command (STRATCOM). - 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. <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Sustain deployed C2BMC Spiral 6.4 Training Support System (TSS). - 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). - 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. 			
Accomplishments/Planned Programs Subtotals	79.068	96.208	91.111

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: <i>Ballistic Missile Defense Targets</i>	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
• 0604883C: <i>Precision Tracking Space System</i>	204.666	-	-	-	-	-	-	-	-	-	204.666

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 capability development. 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Operations and Support - Indirect Support	MIPR	DISA DECC/DISA TECC : Various	4.761	9.000		7.650	Oct 2013	7.803		-		7.803	Continuing	Continuing	Continuing
Operations and Support - Teleport Sustainment	MIPR	SPAWAR : San Diego, CA	2.799	2.045		-		-		-		-	-	4.844	-
Operations and Support - Unit Personnel, Control System Improvement Sustaining Support	SS/IDIQ	Lockheed Martin Team : Arlington, VA	34.803	49.654		67.034	Dec 2013	62.215		-		62.215	Continuing	Continuing	Continuing
Operations and Support - Warfighter Training	IA	Lockheed Martin Team : Arlington, VA	2.661	-		-		-		-		-	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training And Operations	SS/CPAF	Northrop Grumman : Boeing	0.000	3.175		-		0.700		-		0.700	Continuing	Continuing	Continuing
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	15.194		21.524	Dec 2013	16.743		-		16.743	Continuing	Continuing	Continuing
Concurrent, Test, Training, and Operations (CTTO) - Concurrent Test, Training, Test and Operations	SS/FPAF	COLSA ARC : Huntsville, AL	0.000	-		-		3.650	Oct 2014	-		3.650	Continuing	Continuing	Continuing
Subtotal			45.024	79.068		96.208		91.111		-		91.111	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MX01 / <i>Command & Control, Battle Management, Communications (C2BMC) Development Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	45.024	79.068	96.208	91.111	-	91.111	-	-	-

Remarks

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	12.549	16.969	22.151	25.668	-	25.668	26.818	29.062	30.750	33.252	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Program Wide Support	16.969	22.151	25.668
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	16.969	22.151	25.668

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	1.749	0.131		0.422	Jun 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various : Multi: AK/AL/CA/CO/HI/MD/VA/NJ/NY/OCONUS	0.000	0.013		-		-		-		-	0.015	0.028	-
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AK, AL, CA, CO, HI, VA	0.000	2.088		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various : Multi: AK, AL, CA, CO, HI, VA	8.000	14.388		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Various : Multi: AK, AL, CA, CO, VA	0.000	0.349		21.729	Nov 2013	22.062		-		22.062	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services Travel	Allot	Various : Multi: AL, CA, CO, VA	2.800	-		-		-		-		-	2.800	5.600	-
Program Wide Support - Agency Operations, Sustainment and GPC	Allot	Various : Multi: AL, CO, VA etc.	0.000	-		-		1.454		-		1.454	Continuing	Continuing	Continuing
Program Wide Support - Facilities Maintenance SRM	MIPR	Various : Multi: AK, CA, CO, AL, MD, NJ, VA	0.000	-		-		2.152		-		2.152	Continuing	Continuing	Continuing
Subtotal			12.549	16.969		22.151		25.668		-		25.668	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603896C / <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	12.549	16.969	22.151	25.668	-	25.668	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	107.604	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
MD03: <i>Joint Warfighter Support</i>	105.974	45.208	40.128	14.569	-	14.569	17.144	17.285	17.517	17.912	Continuing	Continuing
MT03: <i>Joint Warfighter Support Test</i>	-	-	-	29.134	-	29.134	32.383	32.910	33.486	34.323	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	1.630	2.502	2.491	2.684	-	2.684	3.092	3.357	3.696	4.017	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

Beginning in FY2015, Joint Warfighter Support transfers from Budget Project MD03 to Budget Project MT03.

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). 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	55.550	47.419	47.793	-	47.793
Current President's Budget	47.710	42.619	46.387	-	46.387
Total Adjustments	-7.840	-4.800	-1.406	-	-1.406
• Congressional General Reductions	-0.074	-			
• Congressional Directed Reductions	-	-4.800			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.636	-			
• SBIR/STTR Transfer	-0.651	-			
• Other Adjustment	-4.479	-	-1.406	-	-1.406

Change Summary Explanation

Decrease of \$1.406 in FY 2015 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD03: <i>Joint Warfighter Support</i>	105.974	45.208	40.128	14.569	-	14.569	17.144	17.285	17.517	17.912	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

The Warfighter Strategic Integration in MD03 is comprised of five primary functions: (1) Combatant Commander (CCMD) Support including US Strategic Command (USSTRATCOM) and USNorthern Command (USNORTHCOM); (2) Joint Staff Engagement; (3) Military Services Engagement; (4) Current Operations Support; and (5) Warfighter Training Support.

Combatant Commander Support (USSTRATCOM and USNORTHCOM) entails: supporting the Warfighter Involvement Process; assisting Warfighters with the annual BMDS Prioritized Capabilities List (PCL) and Modification and Fielding Request List (MFRL); educating CCMD's in development of common BMDS operational procedures; coordinating with USSTRATCOM regarding the Operations Forces Standing Committee (OSFC) and Departmental Corporate Boards (such as the Missile Defense Executive Board); Supporting USSTRATCOM and USNORTHCOM Assistants to the Director (ATD)/LNOs in communications with CCMD staffs on BMDS capabilities and deployments; supporting Joint Functional Component Command Integrated Missile Defense (JFCC IMD) Integration efforts; and coordinating the CCMD inquiries into the Requests for Analysis and Requests for Information (RFA/RFI) process.

Joint Staff Engagement support includes: facilitating and coordinating Joint Staff interactions with the Agency; responding to BMDS Capability Delivery process inquiries and transition and transfer actions from the Services; maintaining daily, strategic-level interfaces with the Joint Staff, providing critical information required to plan for fielding and operation of BMDS capabilities and coordinating Joint Staff inquiries into the MDA RFA/RFI process.

Military Services Engagement includes: facilitate and coordinate Service Boards of Directors (BoDs); supporting the BMDS Capability Delivery process and transition and transfer to the Services; establishing and updating Annexes for transitioned and transitioning BMDS capabilities; maintaining daily, strategic-level interfaces with the Military Services to provide critical information required to plan for the delivery, fielding, and operation of respective Lead Service BMDS capabilities; and coordinating Military Service inquiries in the MDA RFA/RFI process.

The Current Operations Support function entails: Operating the MDA Operations Support Center (OSC) 24 hours per day, 7 days per week; staffing and operating two MDA Operations Centers (MOC) in VA and in AL (HMOC) five days per week; serving as the office of primary responsibility for MDA participation in the BMDS Asset

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Management (BAM) Scheduling and Execution Process; collecting and reporting BMDS operational availability and readiness data; leading the MDA operations support task force in support of real-world contingencies, crisis events and exercises; and leading the staffing and processing of Warfighter RFA/RFIs.

Warfighter Training Support includes: Providing technical and programmatic updates on BMD systems; providing Missile Defense Space Warning tool (MDST) support; coordinating C2BMC, Distributed Multi-Echelon Training System (DMETS), and other BMD training; and developing the BMDS Handbook.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Warfighter Operational Support / Wargames and Exercises</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Managed MDA and Combatant Command (CCMD) interface activities. -Provided support to the development and updated of Ballistic Missile Defense(BMD) portions of CCMD Operation Plans (OPLANS) and Contingency Plans (CONPLANS). -Provided support to the BMDS Capability Delivery process and transition and transfer to the Services. -Coordinated and integrated CCMD requirements into the BMDS Integrated Master Test Plan. -Integrated and provided information to the Global Deployment Program Office (GDPO). -Assisted the Warfighter in the development and execution of required MDA tasks with the Joint Functional Component Command - Integrated Missile Defense (JFCC-IMD) Force Preparation Campaign Plan (FPCP). -Synchronized MDA integrated fielding plans with Warfighter Operational Readiness and Acceptance (OR&A) efforts. -Served as liaison between internal MDA organizations and JFCC-IMD across all functional areas (e.g. operations, plans and resources) to facilitate Geographic Combatant Command (GCC) participation in the BMDS capability definition, design, development, integration and delivery processes. -Engaged in MDA/GCC interface and synchronization of information regarding capabilities and security cooperation strategies. -Prepared MDA Senior Leadership for engagements with the GCCs. Supported MDA Senior Leadership Engagements including the Middle East Missile and Air Defense Conference (MEMAD), Fires Conference at Fort Sill, Kingdom of Saudi Arabia Air and Missile Defense Committee, 2012 Multinational Conference, European Command (EUCOM) Ballistic Missile Defense Upgrade Conference and multiple engagements in conjunction with flight tests. -Assisted with planning and developing GCC CCMD engagement strategy and attended Technical Interchange Meetings (TIMs). Provided FTI-01 Warfighter engagement support through assistance with Operational Mission Profile (OMP) development and TIMs. -Supported the GCC Assistants to the Director (ATDs)/Liaison Officers (LNOs). -Supported in developing responses and coordinating actions and taskings, including requests for information regarding BMDS operations and programmatic inquiries related to the programs. 	26.554	26.991	-
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<p>-Conducted, coordinated, and participated in meetings and working groups in response to real world events and associated MDA tasks.</p> <p>-Planned and coordinated activities during real world contingencies to include senior level status briefings. Provided surge support to the Huntsville MDA Operation Center (HMOC) during Operation Dynamic View, enabling the HMOC to achieve 24x7 operations presence in support of Senior Leadership in Huntsville. Also provided surge support to the HMOC during the April/May Period of Interest.</p> <p>-Assisted with BMD planning, analysis, and activation of MDA assets for use in the operating force.</p> <p>-Supported multiple Flag Officer/General Officer (FOGO) and 0-6 level planning and execution engagements in support of AN/TPY-2 deployments in the Central Command (CENTCOM) and Pacific Command (PACOM) AORs.</p> <p>-Conducted an internal reorganization in May to maximize efficiency and leverage available personnel to improve support for Geographic Combatant Commands. Also conducted a reorganization that transferred the Wargames & Exercises Division from Ground Test (DTG) to Warfighter Operational Support (DTW).</p> <p>Participated in multiple Wargames and Exercises Events during FY 2013. Reference MD03 R-4/R-4A for details.</p> <p>FY 2014 Plans:</p> <p>-Continue efforts as listed under FY 2013 plans</p> <p>-Requirement decrease result of approved Wargames and Exercises changes</p> <p>-Support of war games and exercises as listed in FY 2013</p> <p>FY 2015 Plans:</p> <p>N/A</p>			
<p>Title: Strategic Warfighter Integration</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>-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</p> <p>-Manned and operated 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</p>	<p>Articles:</p> <p>18.654</p> <p>-</p>	<p>13.137</p> <p>-</p>	<p>14.569</p> <p>-</p>

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

	FY 2013	FY 2014	FY 2015
<p>as a fusion center for MDA Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response</p> <ul style="list-style-type: none"> -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 -Developed daily updates to the Combat Capabilities Assessment Schedule (CCAS) supporting 14th Air Force and the Combined Operating Schedules for EUCOM and CENTCOM -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 have 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 Crisis Planning Team (CPT) in support of COCOM contingencies, Exercises -Continued to enhance Operations Support Center (OSC) 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 increased fidelity and technical detail in configuration specifications -Continued to coordinate and align BMDS scheduled maintenance to maximize availability 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Continued integration of Capability Demonstration-like objectives into the Ground Test Campaign -Continued to update the Handbook and created and published 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 -Continued to provide the BMDS Update Briefing to MDA Leadership at Headquarters Command Center -Continued to provide direct support to MDA Leadership at Headquarters Command Center -Continued to perform Battle Staff and Crisis Action Team operations for MDA Headquarters Command Center at Fort Belvoir, VA -Continued to provide BMDS operational situational awareness and real-world crisis response for MDA Headquarters Command Center at Fort Belvoir, VA -Continued to coordinate MDA Warfighter Strategic Integration Directorate efforts in support of OSD, Joint Staff and Service requests and tasking response -Provided 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) -Maintained daily, strategic-level interfaces with the Military Services and Joint Staff, provided them with the critical information they required 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 -Supported 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 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -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 OFSC Missile Defense Executive Board on critical BMDS related topics decisions -Supported Combatant Commanders in execution of real-world operations contingencies -Managed Warfighter Request for Analysis Request for Information (RFARFI) process within MDA -Operated the BMDS Joint 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 -Developed Asset Management training courses -Developed Combatant Command training courses -Operated the Joint BMDS Training and Education Center -Provided BMDS-Level Training and Education for the MDA personnel, Joint Warfighters, Department of Defense Officials, Services and selected US Allies (over 3,000 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) -Provided a BMDS 101 to foster greater understanding of missile defense among a general audience -Provided COCOM Staffs with familiarization of the BMDS including capabilities and limitations -Provided DOD and COCOM executive personnel with familiarization of the BMDS including capabilities and limitations. -Provided 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 -Provided missile defense space warning tool (MDST) support for exercises and training for Combatant Commands and Services (up to 247365) -Provided 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 -Support travel requirements to the Civilian and Military staff, to attend various exercises, wargames, planning conferences and technology conferences 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -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 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 -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 -Provide BORRS data to Operational Test Agency in support of their Military Utility Assessments <p>FY 2014 Plans:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-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.</p> <p>FY 2015 Plans: The Agency will continue to make significant strides in Warfighter support by increasing its focus on providing strategic-level interface to USSTRATCOM, USNORTHCOM, the Joint Staff, Office of the Secretary of Defense and Services to facilitate increased Warfighter involvement in the transition and deployment of future ballistic missile defense capabilities. Several of the key Warfighter interface activities include:</p> <p>USSTRATCOM Engagement:</p> <ul style="list-style-type: none"> -Support the Warfighter Involvement Process (WIP) and other MDA Warfighter engagement efforts by assisting Warfighters in their update to the annual BMDS Prioritized Capabilities List (PCL) and Modification and Fielding Request List (MFRL) reflecting changes in Combatant Command and Service priorities for needed BMDS enhancements to address full range of CCMD needs -Share BMDS operational information / educate CCMD's in development of common BMDS operational procedures -Plan and execute a quarterly tag-up between the MDA Deputy Director and the USSTRATCOM Deputy CDR regarding the Operations Forces Standing Committee (OSFC) and Departmental Corporate Boards (such as the Missile Defense Executive Board) -Coordinate the MDA process for responding to USSTRATCOM Requests for Analysis and Requests for Information (RFA/RFI) -Provide reach-back support to the USSTRATCOM ATD in all USSTRATCOM BMDS related activities requiring visibility by the MDA Director -Support Joint Functional Component Command Integrated Missile Defense (JFCC IMD) Integration efforts <p>USNORTHCOM Engagement:</p> <ul style="list-style-type: none"> -Assist MDA and USNORTHCOM Leadership in their efforts to broaden Homeland defense planning to address the full range of USNORTHCOM threats and integration of allies into BMD -Assist in the planning of incorporating additional BMDS related homeland defense capabilities -Leverage developmental and fielding expertise to support allied development of common operational procedures -Coordinate the MDA process for responding to NORTHCOM Requests for Analysis and Requests for Information (RFA/RFI) -Expand Service cooperation and influence acquisition and BMDS capability transfer decisions -Support BMD Senior Leader Forums as well as asset management, test, training, and exercises <p>Joint Staff Engagement:</p> <ul style="list-style-type: none"> -Facilitate/coordinate Joint Staff interactions with the Agency -Provide answers to the BMDS Capability Delivery process and transition and transfer actions to the Services 			

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

	FY 2013	FY 2014	FY 2015
<p>-Provide MDA's planner level coordination for Joint Staff, and inter-agency staff actions</p> <p>-Maintain daily, strategic-level interfaces with the Joint Staff, providing critical information required to plan for the fielding, and operation of BMDS capabilities</p> <p>-Coordinate the MDA process for responding to Joint Staff Requests for Analysis and Requests for Information (RFA/RFI)</p> <p>Military Services Engagement:</p> <p>-Facilitate/coordinate Service Boards of Directors (BoDs)</p> <p>-Support the BMDS Capability Delivery process and transition and transfer to the Services via the Agency Program Offices and Services to establish transition Annexes for BMDS capabilities</p> <p>-Maintain daily, strategic-level interfaces with the Services to provide critical information required to plan for the delivery, fielding, and operation of respective Lead Service BMDS capabilities</p> <p>-Coordinate the MDA process for responding to Service RFA/RFIs.</p> <p>Current Operations Support</p> <p>-Staff / operate the MDA Operations Support Center (OSC) 24 hours per day, 7 days per week to: control the configuration of the operational Ballistic Missile Defense System (BMDS); coordinate the execution of daily scheduled BMDS activities through the Asset Management System; capture scheduled and unscheduled outage start and stop times through the BMDS Operational Readiness Reporting System; monitor the "Health and Status" of BMDS assets deployed worldwide; support MDA Senior Leadership with prompt and accurate Critical Information Reporting</p> <p>-Take rapid corrective action to remediate system and support equipment faults and thereby maximize system availability and effectiveness against threat missiles</p> <p>-Gather, develop, fuse, document, and communicate BMDS operational data to all BMDS stakeholders</p> <p>-Provide certification training to BWO, ABWO, BSO, and other Operations Support Center staff</p> <p>-Support MDA Continuity of Operations Program planning and execution activities</p> <p>-Staff and operate two MDA Operations Centers (MOC) in VA and in AL (HMOC) five days per week to provide MDA Senior Leadership with Agency command, control, and communications capability to worldwide MDA activities</p> <p>-Serve as the fusion center for MDA's Warfighter Strategic Integration efforts in support of OSD, Joint Staff, CCMD and Services</p> <p>-Serve as the office of primary responsibility for MDA participation in the BMDS Asset Management (BAM) Process defined by USSTRATCOM</p> <p>-Develop and maintain the Integrated Scheduling Tool, information technology infrastructure, and tailored applications which facilitate BMDS planning, scheduling, and execution management supporting Homeland and Theater / Regional BMDS</p> <p>-Coordinate with CCMDs to develop the BMDS Annual Plan, coordinate BMDS operating schedules, and synchronize BMDS execution schedules</p> <p>-Publish Asset Management user and system administrator guides and develop and conduct Asset Management training courses</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Coordinate and align BMDS scheduled maintenance to maximize operational and developmental availability -Collect and report BMDS operational availability and readiness data through the network based BMDS Operational Readiness Reporting System (BORRS) -Lead the MDA Operations Support Planning Team (OSPT), an Agency-wide task force, in support of real-world contingencies, crisis events and exercises -Lead the staffing and processing of Warfighter Requests for Analysis/Requests for Information (RFA/RFI)			
Warfighter Training Support -Provide technical and programmatic updates on BMD systems in support of Warfighter training -Provide Missile Defense Space Warning tool (MDST) support for exercises and training for Combatant Commands and Services (up to 24/7) -Coordinate C2BMC, Distributed Multi-Echelon Training System (DMETS), and other BMD training with the Warfighter through the USSTRATCOM, Joint Staff (J-7), MDA co-chaired BMD Training and Education Working Group -Develop and promulgate the BMDS Handbook to enable Warfighter understanding of the capabilities and limitations of the fielded BMDS			
Accomplishments/Planned Programs Subtotals	45.208	40.128	14.569

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors Enabling Programs</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	5.977	6.515	6.389	-	6.389	7.112	7.290	7.454	7.665	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	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

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

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

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Warfighter Operational Support / Wargames and Exercises - Civilian Salaries/Operations Sustainment	Allot	MDA Headquarters : Colorado Springs, Huntsville, NCR	5.631	1.780		1.993		-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Combatant Commanders (COCOM) Support	C/CPAF	Joint National Integration Research & Development Center (JRDC)/ MIPR : Colorado Springs, Huntsville, NCR	66.443	19.457		15.018		-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Combatant Commanders (COCOM) Support A&AS	C/CPFF	Missile Defense Agency Engineering & Support Services (MiDAESS) : Colorado Springs, Huntsville, NCR	5.173	2.711		1.281		-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Government Travel & Training	Allot	MDA Headquarters : Colorado Springs, Huntsville, NCR	0.000	0.350		0.795		-		-		-	Continuing	Continuing	Continuing
Warfighter Operational Support / Wargames and Exercises - Support to MDA Leadership A&AS	C/CPFF	MiDAESS : Colorado Springs, Huntsville, NCR	4.506	0.978		3.755		-		-		-	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603898C / Ballistic Missile Defense Joint Warfighter Support				MD03 / Joint Warfighter Support							
Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Warfighter Operational Support / Wargames and Exercises - Wargame Support	C/CPAF	JRDC/MIPR : Colorado Springs	0.000	1.278		4.149		-		-		-	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Administrative HR	C/CPFF	MiDAESS : Colorado Springs NCR	0.359	0.208		0.350	Oct 2013	0.300	Oct 2014	-		0.300	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Asset Management Server Maintenance	C/CPAF	JRDC : Colorado Springs, Huntsville	0.550	0.467		0.465	Nov 2013	0.800	Nov 2014	-		0.800	Continuing	Continuing	Continuing
Strategic Warfighter Integration - BMDS Training and Education/ MDST	C/CPAF	JRDC : Colorado Springs	5.000	6.239		0.497	Nov 2013	1.801	Nov 2014	-		1.801	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Civilian Salaries/Operations Sustainment	Allot	MDA : Colorado Springs/Huntsville, NCR	11.680	3.828		4.300	Oct 2013	4.300	Oct 2014	-		4.300	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Current Operations	C/CPAF	JRDC : Colorado Springs, NCR	2.121	3.847		3.000	Nov 2013	3.100	Nov 2014	-		3.100	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Current Operations A&AS	C/CPFF	MiDAESS : Colorado Springs, Huntsville, NCR	1.800	1.748		1.910	Oct 2013	2.850	Oct 2014	-		2.850	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Joint Staff and Service Interface	C/CPAF	MDA : Colorado Springs, Colorado	0.000	-		-		-		-		-	-	-	-
Strategic Warfighter Integration - Joint Staff and Service Interface A&AS	C/CPFF	MiDAESS : Colorado Springs, Huntsville, NCR	1.800	1.748		1.910	Oct 2013	0.950	Oct 2014	-		0.950	Continuing	Continuing	Continuing
Strategic Warfighter Integration - Training	C/CPFF	MiDAESS : Colorado Springs	0.700	0.404		0.450	Oct 2013	0.300	Oct 2014	-		0.300	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
and Education to the Warfighter															
Strategic Warfighter Integration - Travel and Training	Allot	MDA : Colorado Springs, Huntsville	0.211	0.165		0.255	Oct 2013	0.168	Oct 2014	-		0.168	Continuing	Continuing	Continuing
Subtotal			105.974	45.208		40.128		14.569		-		14.569	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	105.974	45.208	40.128	14.569	-	14.569	-	-	-

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency							Date: March 2014			
Appropriation/Budget Activity 0400 / 4			R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>			Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>				
	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
VIGILANT SHIELD 13 Exercise Event - 2013	▲																											
AIR MISSILE DEFENSE 13 CENTCOM Exercise 1 - 2013	▲																											
GLOBAL THUNDER 13 Event - 2013	▲																											
JOINT TACTICAL AIR PICTURE Event - 2013	▲																											
KEEN SWORD Exercise- 2013	▲																											
AUSTERE CHALLENGE - 2013	▲																											
BMDS WARGAME Event		▲																										
JOINT AIR DEFENSE Exercise Event 1 - 2013			▲																									
JOINT AIR DEFENSE Exercise Event 2 and 3 - 2013				▲																								
GLOBAL DEFENDER Exercise					▲																							
JOINT AIR DEFENSE Table Top Exercise Event 6 and 7 - 2013						▲																						
AIR MISSILE DEFENSE 13 EUROM Exercise 2 - 2013							▲																					
GLOBAL LIGHTNING 13 Exercise Event PART A- 2013								▲																				
GLOBAL LIGHTNING 13 Exercise Planning PART B- 2013									▲																			
NIMBLE TITAN 13 Wargame Event - 2013										▲																		
KEEN EDGE 13 Exercise Planning- 2013											▲																	
PLANNING & EXERCISE Event - 2013												▲																
GLOBAL DEFENDER EXERCISE (GDEx 04e) Event - 2013													▲															
JOINT PROJECT OPTIC WINDMILL 2013														▲														
FLEET SYNTHETIC TRAINING Exercise - 2013															▲													
EAGLE RESOLVE 13 Exercise Event - 2013																▲												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ULCHI FREEDOM GUARD 13 Event - 2013				▲																								
NIMBLE FIRE Exercise - 2013				▲																								
KEY RESOLVE Planning Exercise - 2014				△																								
GLOBAL THUNDER 15 Exercise Planning - 2014				△																								
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 14- 2014				△																								
GLOBAL LIGHTNING 14 Exercise Event - 2014				△																								
RAMSTEIN ALLIANCE EXERCISE - 2014				△																								
EAGLE RESOLVE Exercise 14 - 2014				△																								
NIMBLE TITAN Year 2 14 Wargame Event - 2014				△																								
VIGILANT SHIELD 15 Exercise Planning - 2014				△																								
MISSILE DEFENSE CONFERENCE Wargame Event - 2014				△																								
ULCHI FREEDOM GUARD 14 Event - 2014				△																								
AIR and MISSILE DEFENSE Exercise CENTCOM Event 1 - 2014				△																								
NIMBLE FIRE Exercise Event 3- 2014				△																								
NIMBLE FIRE Exercise Event 2 - 2014				△																								
FLEET SYNTHETIC TRAINING Exercise - 2014				△																								
BMDS WARGAME 2015 Event - 2014				△																								
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014				△																								
KEEN EDGE 14 Exercise Event - 2014				△																								
ARABIAN GULF SHIELD Exercise Event 2 - 2014				△																								

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AIR and MISSILE DEFENSE Exercise CENTCOM Event 2 - 2014								▲																				
JUNIPER COBRA 14 - 2014								✦	✦	✦	✦	✦																
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014								▲																				
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014								▲																				
GDEx 06 Part 1								▲																				
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014								▲																				
ARABIAN GULF SHIELD Exercise Event 3-2014								▲																				

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
VIGILANT SHIELD 13 Exercise Event - 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
JOINT TACTICAL AIR PICTURE Event - 2013	1	2013	1	2013
KEEN SWORD Exercise- 2013	1	2013	1	2013
AUSTERE CHALLENGE - 2013	1	2013	1	2013
BMDS WARGAME Event	2	2013	2	2013
JOINT AIR DEFENSE Exercise Event 1 - 2013	2	2013	2	2013
JOINT AIR DEFENSE Exercise Event 2 and 3 - 2013	2	2013	2	2013
GLOBAL DEFENDER Exercise	3	2013	3	2013
JOINT AIR DEFENSE Table Top Exercise Event 6 and 7 - 2013	3	2013	3	2013
AIR MISSILE DEFENSE 13 EUCOM Exercise 2 - 2013	3	2013	3	2013
GLOBAL LIGHTNING 13 Exercise Event PART A- 2013	3	2013	3	2013
GLOBAL LIGHTNING 13 Exercise Planning PART B- 2013	3	2013	3	2013
NIMBLE TITAN 13 Wargame Event - 2013	3	2013	3	2013
KEEN EDGE 13 Exercise Planning - 2013	3	2013	3	2013
PLANNING & EXERCISE Event - 2013	3	2013	3	2013
GLOBAL DEFENDER EXERCISE (GDEx 04e) Event - 2013	3	2013	3	2013
JOINT PROJECT OPTIC WINDMILL 2013	3	2013	3	2013
FLEET SYNTHETIC TRAINING Exercise - 2013	3	2013	3	2013
EAGLE RESOLVE 13 Exercise Event - 2013	3	2013	3	2013
ULCHI FREEDOM GUARD 13 Event - 2013	4	2013	4	2013

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NIMBLE FIRE Exercise - 2013	4	2013	4	2013
KEY RESOLVE Planning Exercise - 2014	1	2014	1	2014
GLOBAL THUNDER 15 Exercise Planning - 2014	1	2014	1	2014
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 14- 2014	1	2014	1	2014
GLOBAL LIGHTNING 14 Exercise Event - 2014	1	2014	1	2014
RAMSTEIN ALLIANCE EXERCISE - 2014	1	2014	1	2014
EAGLE RESOLVE Exercise 14 - 2014	1	2014	1	2014
NIMBLE TITAN Year 2 14 Wargame Event - 2014	1	2014	1	2014
VIGILANT SHIELD 15 Exercise Planning - 2014	1	2014	1	2014
MISSILE DEFENSE CONFERENCE Wargame Event - 2014	1	2014	1	2014
ULCHI FREEDOM GUARD 14 Event - 2014	1	2014	1	2014
AIR and MISSILE DEFENSE Exercise CENTCOM Event 1 - 2014	1	2014	1	2014
NIMBLE FIRE Exercise Event 3- 2014	2	2014	2	2014
NIMBLE FIRE Exercise Event 2 - 2014	2	2014	2	2014
FLEET SYNTHETIC TRAINING Exercise - 2014	2	2014	2	2014
BMDS WARGAME 2015 Event - 2014	2	2014	2	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 2 - 2014	2	2014	2	2014
KEEN EDGE 14 Exercise Event - 2014	2	2014	2	2014
ARABIAN GULF SHIELD Exercise Event 2 - 2014	2	2014	2	2014
AIR and MISSILE DEFENSE Exercise CENTCOM Event 2 - 2014	3	2014	3	2014
JUNIPER COBRA 14 - 2014	4	2014	3	2015
JOINT AIR DEFENSE CENTCOM Exercise Event 4 - 2014	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 3 - 2014	3	2014	3	2014
GDEx 06 Part 1	3	2014	3	2014
JOINT AIR DEFENSE CENTCOM Exercise Event 5 - 2014	4	2014	4	2014

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency			Date: March 2014	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD03 / <i>Joint Warfighter Support</i>		

Events	Start		End	
	Quarter	Year	Quarter	Year
ARABIAN GULF SHIELD Exercise Event 3- 2014	4	2014	4	2014

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>				Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT03: <i>Joint Warfighter Support Test</i>	-	-	-	29.134	-	29.134	32.383	32.910	33.486	34.323	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

Beginning in FY2015, Joint Warfighter Support Test transfers from Budget Project MD03 to Budget Project MT03.

A. Mission Description and Budget Item Justification

Joint Warfighter Support (MT03) is comprised of two primary responsibilities: Wargames and Exercises and Warfighter Operational Support

Wargames and Exercises:

- Support the Warfighter in planning and conducting worldwide Wargames and Exercises in support of the BMDS development and fielding.
- Enable the Warfighter to define, test, deploy, and employ new missile defense capabilities.
- Support Joint Functional Component Commander for Integrated Missile Defense (JFCC IMD) BMDS Table Top Exercises 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 (USNORTHCOM, USSTRATCOM) Combatant Commands.
- Complete test planning for BMDS Flight Test events as shown in Exhibit R-4 Schedule.

Warfighter Operational Support (Program Planning and Operations):

- Prepare MDA senior leadership for engagements with the Geographic Combatant Commands (GCCs) by providing logistical support to the GCC Assistants and to the Director (US Central Command, US European Command and US Pacific Command) by developing briefings for senior leader forums.
- Directly interface with the GCCs on Ballistic Missile Defense (BMD) operational issues by providing Planning and Analysis support and capturing/transmitting GCC Requests for Information and Request for Analysis (RFIs/RFAs).
- Support GCC Contingency Activation planning for real world contingencies and Theater Security Cooperation programs by supervising the activation of MDA Research, Development, Test, and Evaluation (RDT&E) assets for use in the Operational Ballistic Missile Defense System (BMDS).
- Facilitate GCC participation in the BMDS capability definition, design, development, integration, and delivery processes by serving as the key interface in the Warfighter Involvement Process (WIP) to assist synchronized capability delivery with operational readiness and acceptance.
- Provides Resource Management and Administration of Directorate's personnel and dollars.

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

	FY 2013	FY 2014	FY 2015
Title: Wargames and Exercises	-	-	21.699

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p align="right">Articles:</p> <p>Description: Beginning in FY2015, Joint Warfighter Support Test transfers from Budget Project MD03 to Budget Project MT03.</p> <p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans: N/A</p> <p>FY 2015 Plans: Wargames and Exercises Planned Activities: -Provide feedback and support involvement in MDA's BMDS development process. -Support the Joint Functional Component Commander for Integrated Missile Defense (JFCC IMD) BMDS Table Top Exercise(s) to facilitate the Global Missile Defense Capability and 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; conduct System Capability Reviews of new BMDS assets approaching the timeline to be fielded. -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 Program Offices and the Warfighter to establish Concepts of Operations that will support future MDA development. -Provide support for MDA and Component Command participants to attend BMD Wargames and Exercises. -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 in support of the Wargames and Exercises mission.</p>	-	-	-
<p>Title: Program, Planning and Operations</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans: N/A</p> <p>FY 2015 Plans:</p>	-	-	7.435

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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

	FY 2013	FY 2014	FY 2015
<p>The Agency continues to make significant strides in Warfighter Operational support by increasing its focus on providing operational-level interface to the Geographic Combatant Commands and facilitating increased Warfighter participation in development of future missile defense capabilities. Several of the key Warfighter interface activities include:</p> <p>EUCOM Engagement:</p> <ul style="list-style-type: none"> -In coordination with EUCOM, broaden PAA to address full range of EUCOM threats -Share operational information and educate allies to develop common operational procedures -Expand cooperation and influence acquisition decisions with NATO partners -Support BMD training and exercises with NATO partners -Support the EUCOM Assistant to the Director (ATD)/Liaison Officer (LNO) in preparation of their attendance at Technical Interchange meetings on the deployment of the BMDS in the EUCOM AOR. -Provide reach-back support to the EUCOM Assistant to the Director in all EUCOM activities requiring visibility by the MDA Director and Director for Test. -In coordination with MDA Global Deployment Program Office, assist with all planning and execution activities required for deployment of BMDS assets and components in the EUCOM AOR. -Provide all activities related to the planning and execution of a yearly Senior Leader Forum hosted by the MDA Director and EUCOM Deputy Commander at EUCOM HQ. Also plan and execute a quarterly tag-up between the DT and the EUCOM J-3. <p>CENTCOM Engagement:</p> <ul style="list-style-type: none"> -Coordinate MDA and CENTCOM Phased Adaptive Approach Planning activities. -Assist MDA and COCOM leadership in development of a regional partner data sharing system supporting CENTCOM regional IAMD architecture development -Support all potential BMDS FMS activities in the CENTCOM AOR -Support MDA leadership and the ATD/LNO in supporting GCC Strategic Cooperation Forum -Support all Cross-AOR Planning and Execution activities. -Provide all activities related to the planning and execution of a yearly Senior Leader Forum hosted by the MDA Director and CENTCOM Deputy Commander at EUCOM HQ. Also plan and execute a quarterly tag-up between the DT and the CENTCOM J-3. <p>PACOM Engagement:</p> <ul style="list-style-type: none"> -Assist MDA and PACOM Leadership in their efforts to broaden Phased Adaptive Approach planning to address a full range of PACOM threats and integration of allies into BMDS -Assist in the planning and execution of incorporating an additional AN/TPY-2 in the PACOM AOR -Integrate International partner sensors into the BMDS 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Share operational information and educate allies to develop common operational procedures -Expand international cooperation and influence acquisition decisions -Support BMD test, training, and exercises <p>MDA Operations Support:</p> <ul style="list-style-type: none"> -Support Operations Support Planning Team (OSPT) activation during heightened period of interest. -Support Warfighters, DOD Agencies, and Services in identifying desired Missile Defense capabilities and characteristics. Obtain Warfighter community participation and advice on desired operational features and approaches to system fielding throughout development. -Track analysis and response preparation for COCOM Requests for Action and Requests for Information (RFAs/RFIs). -Serve as the immediate link between the DT and the Geographic Combatant Commands on all Warfighter activities and requirements. -Prepare DT and other MDA senior leadership for attendance at Army, Navy and Air Force Board of Directors (BOD) meetings and Air and Missile Defense (AMD) General Officer Steering Committee (GOSC) meetings. -Coordinate MDA and GCC participation in the BMDS capability definition, design, development, integration. -Provide Resource Management and Administration of MT03 personnel and dollars. -Support and man the Huntsville Operation Center during surge operations and sustained 24 hour operations. 			
Accomplishments/Planned Programs Subtotals	-	-	29.134

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

N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Wargames and Exercises - Combatant Commanders (COCOM) Support	C/CPAF	JRDC/MIPR : Colorado Springs, Huntsville, NCR	0.000	-		-		15.527		-		15.527	Continuing	Continuing	Continuing
Wargames and Exercises - Wargame Support	C/CPAF	JRDC/MIPR : Colorado Springs	0.000	-		-		6.172		-		6.172	Continuing	Continuing	Continuing
Program, Planning and Operations - Civilian Salaries/Operations Sustainment	Allot	MDA : Colorado Springs, Huntsville, NCR	0.000	-		-		1.932		-		1.932	Continuing	Continuing	Continuing
Program, Planning and Operations - Combatant Commanders (COCOM) Support A&AS	C/CPFF	MiDAESS : Colorado Springs, Huntsville, NCR	0.000	-		-		1.242		-		1.242	Continuing	Continuing	Continuing
Program, Planning and Operations - Government Travel & Training	Allot	MDA : Colorado Springs, Huntsville, NCR	0.000	-		-		0.621		-		0.621	Continuing	Continuing	Continuing
Program, Planning and Operations - Support to MDA Leadership A&AS	C/CPFF	MiDAESS : Colorado Springs, Huntsville, NCR	0.000	-		-		3.640		-		3.640	Continuing	Continuing	Continuing
Subtotal			0.000	-		-		29.134		-		29.134	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	-	29.134	-	29.134	-	-	-

Remarks
Prior year funding was captured in MD03 budget project.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AIR and MISSILE DEFENSE 15 CENTCOM Exercise 1 - 2015										▲																		
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2015										▲																		
RAMSTEIN ALLIANCE EXERCISE - 2015										▲																		
GLOBAL THUNDER 15 Exercise Event - 2015										▲																		
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 15 - 2015										▲																		
EPOCH PLANEX 15 Exercise - 2015										▲																		
VIGILANT SHIELD 15 Exercise Event - 2015										▲																		
ARABIAN GULF SHIELD 15 Exercise Event 1 - 2015										▲																		
ULCHI FREEDOM GUARD 15 Event - 2015										▲																		
NIMBLE FIRE 15 Wargame Event 1 - 2015										▲																		
MISSILE DEFENSE CONFERENCE Wargame Event - 2015										▲																		
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2015																												
KEEN SWORD 15 Exercise - 2015																												
ARABIAN GULF SHIELD 15 Exercise Event 2 - 2015																												
EAGLE RESOLVE 15 Exercise Event - 2015																												
NIMBLE FIRE 15 Wargame Event 2 - 2015																												
AIR and MISSILE DEFENSE 15 CENTCOM Exercise 2 - 2015																												
AUSTERE CHALLENGE 15 Exercise - 2015																												
KEEN EDGE 16 Exercise Event - 2016																												
BMDS WARGAME 2015 Event - 2015																												
NIMBLE FIRE 15 Wargame Event 3 - 2015																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GLOBAL LIGHTNING 15 Exercise Event - 2015											▲																	
GDEx 06 Part 2											▲																	
KEY RESOLVE 15 Exercise - 2015											▲																	
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2015											▲																	
FLEET SYNTHETIC TRAINING Exercise - 2015											▲																	
ARABIAN GULF SHIELD 15 Exercise Event 3 - 2015											▲																	
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2015											▲																	
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2015												▲																
VIGILANT SHIELD 16 Exercise Event - 2016													▲															
GLOBAL THUNDER 16 Exercise Event - 2016													▲															
AIR and MISSILE DEFENSE 16 CENTCOM Exercise 1 - 2016													▲															
NIMBLE TITAN 16 Wargame Event 2 - 2016													▲															
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2016													▲															
MISSILE DEFENSE CONFERENCE Wargame Event - 2016													▲															
NIMBLE TITAN 16 Wargame Event 1 - 2016													▲															
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 15 - 2016													▲															
ARABIAN GULF SHIELD 16 Exercise Event 1 - 2016													▲															
ULCHI FREEDOM GUARD 16 Event - 2016													▲															

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
NIMBLE FIRE 16 Wargame Event 1 - 2016													▲															
RAMSTEIN ALLIANCE EXERCISE - 2016													▲															
EAGLE RESOLVE 16 Exercise Event - 2016														▲														
ARABIAN GULF SHIELD 16 Exercise Event 2- 2016														▲														
NIMBLE FIRE 16 Wargame Event 2 - 2016														▲														
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2016														▲														
JUNIPER COBRA 16 Exercise - 2016															✦	✦	✦	✦										
AIR and MISSILE DEFENSE 16 CENTCOM Exercise 2 - 2016															▲													
FLEET SYNTHETIC TRAINING Exercise - 2016															▲													
KEY RESOLVE 16 Exercise - 2016															▲													
NIMBLE FIRE 16 Wargame Event 3 - 2016															▲													
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2016															▲													
TERMINAL FURY 16 Exercise - 2016															▲													
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2016															▲													
ARABIAN GULF SHIELD 16 Exercise Event 3 - 2016															▲													
GDEx 07a																▲												
GLOBAL LIGHTNING 16 Exercise Event - 2016																▲												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2016																▲												
NIMBLE FIRE 17 Wargame Event 1 - 2017																												▲
ARABIAN GULF SHIELD 17 Exercise Event 1 - 2017																												▲

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ULCHI FREEDOM GUARD 17 Event - 2017																												
GLOBAL THUNDER 17 Exercise Event - 2017																												
RAMSTEIN ALLIANCE EXERCISE - 2017																												
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 17 - 2017																												
EPOCH PLANEX 17 Exercise - 2017																												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2017																												
AIR and MISSILE DEFENSE 17 CENTCOM Exercise 1 - 2017																												
VIGILANT SHIELD 17 Exercise Event - 2017																												
MISSILE DEFENSE CONFERENCE Wargame Event - 2017																												
NIMBLE FIRE 17 Wargame Event 2 - 2017																												
ARABIAN GULF SHIELD 17 Exercise Event 2 - 2017																												
KEEN SWORD 17 Exercise - 2017																												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2017																												
BMDS Wargame 2017 Event - 2017																												
NIMBLE FIRE 17 Wargame Event 3 - 2017																												
EAGLE RESOLVE 17 Exercise Event - 2017																												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2017																												
GDEx 07b Part 1																												
AUSTERE CHALLENGE 17 Exercise - 2017																												
AIR and MISSILE DEFENSE 17 CENTCOM Exercise 2 - 2017																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
JOINT AIR and MISSILE DEFENSE																												
CENTCOM Exercise Event 4 - 2017																												
FLEET SYNTHETIC TRAINING Exercise - 2017																												
ARABIAN GULF SHIELD 17 Exercise Event 3 - 2017																												
KEY RESOLVE 17 Exercise - 2017																												
TERMINAL FURY 17 Exercise - 2017																												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2017																												
GLOBAL LIGHTNING 17 Exercise Event - 2017																												
AIR and MISSILE DEFENSE 18 CENTCOM Exercise 1 - 2018																												
EPOCH PLANEX 18 Exercise - 2018																												
MISSILE DEFENSE CONFERENCE Wargame Event - 2018																												
RAMSTEIN ALLIANCE EXERCISE - 2018																												
NIMBLE FIRE 18 Wargame Event 1 - 2018																												
VIGILANT SHIELD 18 Exercise Event - 2018																												
ULCHI FREEDOM GUARD 18 Event - 2018																												
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2018																												
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 18 - 2018																												
GLOBAL THUNDER 18 Exercise Event - 2018																												
ARABIAN GULF SHIELD 18 Exercise Event 1 - 2018																												
NIMBLE FIRE 18 Wargame Event 2 - 2018																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARABIAN GULF SHIELD 18 Exercise Event 2 - 2018																					▲							
EAGLE RESOLVE 18 Exercise Event - 2018																					▲							
KEEN EDGE 18 Exercise Event - 2018																					▲							
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2018																					▲							
GDEx 07b Part 2																						▲						
AIR and MISSILE DEFENSE 18 CENTCOM Exercise 2 - 2018																						▲						
KEY RESOLVE 18 Exercise - 2018																						▲						
JUNIPER COBRA 18 Exercise - 2018																					✦	✦	✦	✦				
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2018																						▲						
NIMBLE FIRE 18 Wargame Event 3- 2018																						▲						
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2018																						▲						
FLEET SYNTHETIC TRAINING Exercise - 2018																						▲						
ARABIAN GULF SHIELD 18 Exercise Event 3 - 2018																						▲						
GLOBAL LIGHTNING 18 Exercise Event - 2018																							▲					
NIMBLE TITAN 18 Wargame Event 2 - 2018																							▲					
TERMINAL FURY 18 Exercise - 2018																							▲					
NIMBLE TITAN 18 Wargame Event 1 - 2018																							▲					
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2018																						▲						
ULCHI FREEDOM GUARD 19 Event - 2019																								▲				

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019					
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
GLOBAL THUNDER 19 Exercise Event - 2019																												▲		
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1- 2019																												▲		
MISSILE DEFENSE CONFERENCE Wargame Event - 2019																												▲		
EPOCH PLANEX 19 Exercise - 2019																												▲		
ARABIAN GULF SHIELD 19 Exercise Event 1 - 2019																												▲		
RAMSTEIN ALLIANCE EXERCISE - 2019																												▲		
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 19 - 2019																												▲		
NIMBLE FIRE 19 Wargame Event 1 - 2019																												▲		
AIR and MISSILE DEFENSE 19 CENTCOM Exercise 1 - 2019																												▲		
VIGILANT SHIELD 19 Exercise Event - 2019																												▲		
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2- 2019																												▲		
EAGLE RESOLVE 19 Exercise Event - 2019																												▲		
ARABIAN GULF SHIELD 19 Exercise Event 2 - 2019																												▲		
NIMBLE FIRE 19 Wargame Event 2 - 2019																												▲		
KEEN SWORD 19 Exercise - 2019																												▲		
BMDS WARGAME 2019 Event - 2019																												▲		
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4- 2019																												▲		
KEY RESOLVE 19 Exercise - 2019																												▲		
AIR and MISSILE DEFENSE 19 CENTCOM Exercise 2- 2019																												▲		

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

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 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
ARABIAN GULF SHIELD 19 Exercise Event 3 - 2019																																▲
AUSTERE CHALLENGE 19 Exercise - 2019																																✦
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3- 2019																																▲
GDEx 08 Part 1																																▲
NIMBLE FIRE 19 Wargame Event 3 - 2019																																▲
FLEET SYNTHETIC TRAINING Exercise - 2019																																▲
GLOBAL LIGHTNING 19 Exercise Event - 2019																																▲
TERMINAL FURY 19 Exercise - 2019																																▲
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2019																																▲

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AIR and MISSILE DEFENSE 15 CENTCOM Exercise 1 - 2015	1	2015	1	2015
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2015	1	2015	1	2015
RAMSTEIN ALLIANCE EXERCISE - 2015	1	2015	1	2015
GLOBAL THUNDER 15 Exercise Event - 2015	1	2015	1	2015
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 15 - 2015	1	2015	1	2015
EPOCH PLANEX 15 Exercise - 2015	1	2015	1	2015
VIGILANT SHIELD 15 Exercise Event - 2015	1	2015	1	2015
ARABIAN GULF SHIELD 15 Exercise Event 1 - 2015	1	2015	1	2015
ULCHI FREEDOM GUARD 15 Event - 2015	1	2015	1	2015
NIMBLE FIRE 15 Wargame Event 1 - 2015	1	2015	1	2015
MISSILE DEFENSE CONFERENCE Wargame Event - 2015	1	2015	1	2015
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2015	2	2015	2	2015
KEEN SWORD 15 Exercise - 2015	2	2015	2	2015
ARABIAN GULF SHIELD 15 Exercise Event 2- 2015	2	2015	2	2015
EAGLE RESOLVE 15 Exercise Event - 2015	2	2015	2	2015
NIMBLE FIRE 15 Wargame Event 2 - 2015	2	2015	2	2015
AIR and MISSILE DEFENSE 15 CENTCOM Exercise 2 - 2015	2	2015	2	2015
AUSTERE CHALLENGE 15 Exercise - 2015	1	2015	4	2015
KEEN EDGE 16 Exercise Event - 2016	2	2015	2	2015
BMDS WARGAME 2015 Event - 2015	2	2015	2	2015
NIMBLE FIRE 15 Wargame Event 3 - 2015	3	2015	3	2015
GLOBAL LIGHTNING 15 Exercise Event - 2015	3	2015	3	2015

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GDEx 06 Part 2	3	2015	3	2015
KEY RESOLVE 15 Exercise - 2015	3	2015	3	2015
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2015	3	2015	3	2015
FLEET SYNTHETIC TRAINING Exercise - 2015	3	2015	3	2015
ARABIAN GULF SHIELD 15 Exercise Event 3 - 2015	3	2015	3	2015
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2015	3	2015	3	2015
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2015	4	2015	4	2015
VIGILANT SHIELD 16 Exercise Event - 2016	1	2016	1	2016
GLOBAL THUNDER 16 Exercise Event - 2016	1	2016	1	2016
AIR and MISSILE DEFENSE 16 CENTCOM Exercise 1 - 2016	1	2016	1	2016
NIMBLE TITAN 16 Wargame Event 2 - 2016	1	2016	1	2016
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2016	1	2016	1	2016
MISSILE DEFENSE CONFERENCE Wargame Event - 2016	1	2016	1	2016
NIMBLE TITAN 16 Wargame Event 1 - 2016	1	2016	1	2016
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 15 - 2016	1	2016	1	2016
ARABIAN GULF SHIELD 16 Exercise Event 1 - 2016	1	2016	1	2016
ULCHI FREEDOM GUARD 16 Event - 2016	1	2016	1	2016
NIMBLE FIRE 16 Wargame Event 1 - 2016	1	2016	1	2016
RAMSTEIN ALLIANCE EXERCISE - 2016	1	2016	1	2016
EAGLE RESOLVE 16 Exercise Event - 2016	2	2016	2	2016
ARABIAN GULF SHIELD 16 Exercise Event 2- 2016	2	2016	2	2016
NIMBLE FIRE 16 Wargame Event 2 - 2016	2	2016	2	2016
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2016	2	2016	2	2016
JUNIPER COBRA 16 Exercise - 2016	1	2016	4	2016
AIR and MISSILE DEFENSE 16 CENTCOM Exercise 2 - 2016	3	2016	3	2016

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FLEET SYNTHETIC TRAINING Exercise - 2016	3	2016	3	2016
KEY RESOLVE 16 Exercise - 2016	3	2016	3	2016
NIMBLE FIRE 16 Wargame Event 3 - 2016	3	2016	3	2016
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2016	3	2016	3	2016
TERMINAL FURY 16 Exercise - 2016	3	2016	3	2016
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2016	3	2016	3	2016
ARABIAN GULF SHIELD 16 Exercise Event 3 - 2016	3	2016	3	2016
GDEx 07a	4	2016	4	2016
GLOBAL LIGHTNING 16 Exercise Event - 2016	4	2016	4	2016
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2016	4	2016	4	2016
NIMBLE FIRE 17 Wargame Event 1 - 2017	1	2017	1	2017
ARABIAN GULF SHIELD 17 Exercise Event 1 - 2017	1	2017	1	2017
ULCHI FREEDOM GUARD 17 Event - 2017	1	2017	1	2017
GLOBAL THUNDER 17 Exercise Event - 2017	1	2017	1	2017
RAMSTEIN ALLIANCE EXERCISE - 2017	1	2017	1	2017
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 17 - 2017	1	2017	1	2017
EPOCH PLANEX 17 Exercise - 2017	1	2017	1	2017
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2017	1	2017	1	2017
AIR and MISSILE DEFENSE 17 CENTCOM Exercise 1 - 2017	1	2017	1	2017
VIGILANT SHIELD 17 Exercise Event - 2017	1	2017	1	2017
MISSILE DEFENSE CONFERENCE Wargame Event - 2017	1	2017	1	2017
NIMBLE FIRE 17 Wargame Event 2 - 2017	2	2017	2	2017
ARABIAN GULF SHIELD 17 Exercise Event 2 - 2017	2	2017	2	2017
KEEN SWORD 17 Exercise - 2017	2	2017	2	2017
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2017	2	2017	2	2017

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
BMD5 Wargame 2017 Event - 2017	2	2017	2	2017
NIMBLE FIRE 17 Wargame Event 3 - 2017	3	2017	3	2017
EAGLE RESOLVE 17 Exercise Event - 2017	3	2017	3	2017
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2017	3	2017	3	2017
GDEx 07b Part 1	3	2017	3	2017
AUSTERE CHALLENGE 17 Exercise - 2017	1	2017	4	2017
AIR and MISSILE DEFENSE 17 CENTCOM Exercise 2 - 2017	3	2017	3	2017
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2017	3	2017	3	2017
FLEET SYNTHETIC TRAINING Exercise - 2017	3	2017	3	2017
ARABIAN GULF SHIELD 17 Exercise Event 3 - 2017	3	2017	3	2017
KEY RESOLVE 17 Exercise - 2017	3	2017	3	2017
TERMINAL FURY 17 Exercise - 2017	4	2017	4	2017
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2017	4	2017	4	2017
GLOBAL LIGHTNING 17 Exercise Event - 2017	4	2017	4	2017
AIR and MISSILE DEFENSE 18 CENTCOM Exercise 1 - 2018	1	2018	1	2018
EPOCH PLANEX 18 Exercise - 2018	1	2018	1	2018
MISSILE DEFENSE CONFERENCE Wargame Event - 2018	1	2018	1	2018
RAMSTEIN ALLIANCE EXERCISE - 2018	1	2018	1	2018
NIMBLE FIRE 18 Wargame Event 1 - 2018	1	2018	1	2018
VIGILANT SHIELD 18 Exercise Event - 2018	1	2018	1	2018
ULCHI FREEDOM GUARD 18 Event - 2018	1	2018	1	2018
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2018	1	2018	1	2018
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 18 - 2018	1	2018	1	2018
GLOBAL THUNDER 18 Exercise Event - 2018	1	2018	1	2018
ARABIAN GULF SHIELD 18 Exercise Event 1 - 2018	1	2018	1	2018

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
NIMBLE FIRE 18 Wargame Event 2 - 2018	2	2018	2	2018
ARABIAN GULF SHIELD 18 Exercise Event 2 - 2018	2	2018	2	2018
EAGLE RESOLVE 18 Exercise Event - 2018	2	2018	2	2018
KEEN EDGE 18 Exercise Event - 2018	2	2018	2	2018
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2018	2	2018	2	2018
GDEx 07b Part 2	3	2018	3	2018
AIR and MISSILE DEFENSE 18 CENTCOM Exercise 2 - 2018	3	2018	3	2018
KEY RESOLVE 18 Exercise - 2018	3	2018	3	2018
JUNIPER COBRA 18 Exercise - 2018	1	2018	4	2018
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2018	3	2018	3	2018
NIMBLE FIRE 18 Wargame Event 3- 2018	3	2018	3	2018
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2018	3	2018	3	2018
FLEET SYNTHETIC TRAINING Exercise - 2018	3	2018	3	2018
ARABIAN GULF SHIELD 18 Exercise Event 3 - 2018	3	2018	3	2018
GLOBAL LIGHTNING 18 Exercise Event - 2018	4	2018	4	2018
NIMBLE TITAN 18 Wargame Event 2 - 2018	4	2018	4	2018
TERMINAL FURY 18 Exercise - 2018	4	2018	4	2018
NIMBLE TITAN 18 Wargame Event 1 - 2018	4	2018	4	2018
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2018	4	2018	4	2018
ULCHI FREEDOM GUARD 19 Event - 2019	1	2019	1	2019
GLOBAL THUNDER 19 Exercise Event - 2019	1	2019	1	2019
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1- 2019	1	2019	1	2019
MISSILE DEFENSE CONFERENCE Wargame Event - 2019	1	2019	1	2019
EPOCH PLANEX 19 Exercise - 2019	1	2019	1	2019
ARABIAN GULF SHIELD 19 Exercise Event 1 - 2019	1	2019	1	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
RAMSTEIN ALLIANCE EXERCISE - 2019	1	2019	1	2019
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 19 - 2019	1	2019	1	2019
NIMBLE FIRE 19 Wargame Event 1 - 2019	1	2019	1	2019
AIR and MISSILE DEFENSE 19 CENTCOM Exercise 1 - 2019	1	2019	1	2019
VIGILANT SHIELD 19 Exercise Event - 2019	1	2019	1	2019
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2- 2019	2	2019	2	2019
EAGLE RESOLVE 19 Exercise Event - 2019	2	2019	2	2019
ARABIAN GULF SHIELD 19 Exercise Event 2 - 2019	2	2019	2	2019
NIMBLE FIRE 19 Wargame Event 2 - 2019	2	2019	2	2019
KEEN SWORD 19 Exercise - 2019	2	2019	2	2019
BMDS WARGAME 2019 Event - 2019	2	2019	2	2019
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4- 2019	3	2019	3	2019
KEY RESOLVE 19 Exercise - 2019	3	2019	3	2019
AIR and MISSILE DEFENSE 19 CENTCOM Exercise 2- 2019	3	2019	3	2019
ARABIAN GULF SHIELD 19 Exercise Event 3 - 2019	3	2019	3	2019
AUSTERE CHALLENGE 19 Exercise - 2019	1	2019	4	2019
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3- 2019	3	2019	3	2019
GDEx 08 Part 1	3	2019	3	2019
NIMBLE FIRE 19 Wargame Event 3 - 2019	3	2019	3	2019
FLEET SYNTHETIC TRAINING Exercise - 2019	3	2019	3	2019
GLOBAL LIGHTNING 19 Exercise Event - 2019	4	2019	4	2019
TERMINAL FURY 19 Exercise - 2019	4	2019	4	2019
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2019	4	2019	4	2019
MISSILE DEFENSE CONFERENCE Wargame Event - 2020	1	2020	1	2020
EUROPEAN AIR and MISSILE DEFENSE Exercise Alliance 20- 2020	1	2020	1	2020

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
EPOCH PLANEX 20 Exercise - 2020	1	2020	1	2020
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 1 - 2020	1	2020	1	2020
GLOBAL THUNDER 20 Exercise Event - 2020	1	2020	1	2020
RAMSTEIN ALLIANCE EXERCISE - 2020	1	2020	1	2020
ARABIAN GULF SHIELD 20 Exercise Event 1 - 2020	1	2020	1	2020
ULCHI FREEDOM GUARD 20 Event - 2020	1	2020	1	2020
NIMBLE FIRE 20 Wargame Event 1 - 2020	1	2020	1	2020
VIGILANT SHIELD 20 Exercise Event - 2020	1	2020	1	2020
EAGLE RESOLVE 20 Exercise Event - 2020	2	2020	2	2020
KEEN EDGE 20 Exercise Event - 2020	2	2020	2	2020
NIMBLE FIRE 20 Wargame Event 2 - 2020	2	2020	2	2020
ARABIAN GULF SHIELD 20 Exercise Event 2 - 2020	2	2020	2	2020
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 2 - 2020	2	2020	2	2020
KEY RESOLVE 20 Exercise - 2020	3	2020	3	2020
JUNIPER COBRA 20 Exercise - 2020	1	2020	4	2020
GDEx 08 Part 2	3	2020	3	2020
NIMBLE FIRE 20 Wargame Event 3 - 2020	3	2020	3	2020
ARABIAN GULF SHIELD 20 Exercise Event 3 - 2020	3	2020	3	2020
FLEET SYNTHETIC TRAINING Exercise - 2020	3	2020	3	2020
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 3 - 2020	3	2020	3	2020
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 4 - 2020	3	2020	3	2020
NIMBLE TITAN 20 Wargame Event 1 - 2020	4	2020	4	2020
NIMBLE TITAN 20 Wargame Event 2- 2020	4	2020	4	2020
GLOBAL LIGHTNING 20 Exercise Event - 2020	3	2020	3	2020
JOINT AIR and MISSILE DEFENSE CENTCOM Exercise Event 5 - 2020	4	2020	4	2020

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency			Date: March 2014	
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MT03 / <i>Joint Warfighter Support Test</i>		

Events	Start		End	
	Quarter	Year	Quarter	Year
TERMINAL FURY 20 Exercise - 2020	4	2020	4	2020

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	1.630	2.502	2.491	2.684	-	2.684	3.092	3.357	3.696	4.017	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	2.502	2.491	2.684
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	2.502	2.491	2.684

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603898C / <i>Ballistic Missile Defense Joint Warfighter Support</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	Allot	Various Multi: AL, CO, CA, VA : Various	0.000	-		0.100		0.212	May 2015	-		0.212	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	ALATEC , INC. : AL, CO, VA	1.630	2.502		1.411	Oct 2013	1.494	Nov 2014	-		1.494	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support, International, and Materiel and Readiness	MIPR	Naval Surface Warfare Center; VA, AL : Various	0.000	-		0.240		0.242	Nov 2014	-		0.242	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi: AL, VA	0.000	-		0.740		0.736		-		0.736	Continuing	Continuing	Continuing
Subtotal			1.630	2.502		2.491		2.684		-		2.684	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.630	2.502	2.491	2.684	-	2.684	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	163.333	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	160.492	58.658	48.823	54.605	-	54.605	48.216	57.261	49.609	50.805	Continuing	Continuing
MC22: <i>Cyber Operations</i>	-	-	0.534	0.537	-	0.537	0.482	0.472	0.635	0.651	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	2.841	3.026	2.738	3.388	-	3.388	3.040	3.861	3.641	3.958	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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.

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 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	
<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 restoral 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>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	63.043	52.131	59.893	-	59.893
Current President's Budget	61.684	52.095	58.530	-	58.530
Total Adjustments	-1.359	-0.036	-1.363	-	-1.363
• Congressional General Reductions	-0.083	-0.036			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	4.527	-			
• SBIR/STTR Transfer	-0.688	-			
• Other Adjustment	-5.115	-	-1.363	-	-1.363

Change Summary Explanation

The FY 2015 reduction of \$1.363 reflects a realignment of Department of Defense priorities.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>				Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD22: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	160.492	58.658	48.823	54.605	-	54.605	48.216	57.261	49.609	50.805	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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 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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Title: Infrastructure Systems and Support</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 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 that provided 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 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 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 MDIOC VOIP implementation - Provided telephony services to include: Telephone/Fax Service: Provided local, long distance, Defense Switch Network and Defense Red Switch telephone systems. Telephone Switch Operations: Operated, maintained, and upgraded telephone switches, nodes, and Private Branch Exchanges to include 911 support 	24.406	17.378	20.475
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Network Management Transport Services:</p> <ul style="list-style-type: none"> - Acquired and distributed mission critical unclassified and secure communications capability to ten resident MDA elements/ components and BMDS and Warfighter operational elements - Provided management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources - Maintained the technical infrastructure and equipment which included, 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"> - 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) - 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 - 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 Admin/General Services (GENSER) and Event Packages - Performed architecture design, engineering, and configuration management reviews for all assigned projects - 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>Infrastructure Implementation Engineering:</p> <ul style="list-style-type: none"> - Implemented intelligence hardware/software updates as required to support the Operations Support Center - 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 - 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- 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</p> <p>- Implemented final Defense Information Systems Agency - Global Information Grid (DISA GIG) Mission Assurance node configuration</p> <p>Software Licenses, Services and Applications:</p> <p>- 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</p> <p>- Planned/Designed/Implemented technical lifecycle, refresh, and standardization of MDIOC print services</p> <p>- Implemented MDIOC web cam upgrade and technology refresh</p> <p>- Implemented a consolidated Microsoft Project Server and delivered as a web based service</p> <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 <p>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.</p> <p>FY 2015 Plans: Computing Center (Operating Systems, Print/Storage Services, Audio/Visual, Operations and Maintenance):</p> <ul style="list-style-type: none"> - 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- Plan/Initiate, when directed, the installation of any additional data feeds required to support the Operations Support Center (OSC)</p> <p>- 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</p> <p>- Plan/Design enhancements to the MDIOC Data Center including floor space allocations, equipment staging areas, and streamlined logistics support function</p> <p>- Design/Implement upgrades to audio/visual support to the MDIOC supporting the distribution of signals over Internet Protocol</p> <p>MDIOC Communication Services:</p> <p>- Install communications and networking infrastructure (hardware/software) in support of evolving mission requirements of resident MDA development, testing, training, and operational activities</p> <p>- Implement Classified and Unclassified Voice Over Internet Protocol (VOIP) expansion to include the completion of the MDIOC VOIP implementation</p> <p>- 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> <p>Network Management Transport Services:</p> <p>- Acquire and distribute mission critical unclassified and secure communications capability to ten resident MDA elements/components and BMDS and Warfighter operational elements</p> <p>- Provide management of network capabilities by monitoring and controlling the network infrastructure, available bandwidth, hardware, and distributed software resources</p> <p>- 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 Information Assurance Systems</p> <p>- 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)</p> <p>- Maintain DoD Information Assurance Certification and Accreditation Process (DIACAP) accreditation packages;</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>manage the Information Assurance Vulnerability Assessment Program and provide technical assistance to Controls Validation Tests</p> <ul style="list-style-type: none"> - 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 <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 a consolidated Microsoft Project Server and deliver as a web based service. 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>Property/Asset Management and Accountability</p> <ul style="list-style-type: none"> - Manage government property in accordance with the Federal Acquisition Regulations (FAR)/DoD FAR Supplements (DFARs) to include accountability, reporting, warehouse management, asset transportation and excess asset management - Maintain an inventory of IT hardware and software assets connected or used in the ULAN, CLAN, SIPRNET and TS/SCI networks <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>The FY 2015 increase is a result of planning for projects deferred in FY 2014.</p>				
<p>Title: Facilities and Maintenance</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Utilities (Electrical, Gas, Sewer, Water, Steam, and Chilled Water): - Procured utility services through 50th Air Force Space Wing (Host Base) - Sustained utility infrastructure and delivery systems <p>Environmental, Safety and Occupational Health (ESOH):</p> <ul style="list-style-type: none"> - 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 		<p>Articles:</p> <p>18.354</p> <p>-</p>	<p>15.198</p> <p>-</p>	<p>13.786</p> <p>-</p>

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014
<p>Facilities Operations and Sustainment:</p> <ul style="list-style-type: none"> - 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) - Conducted preventative maintenance inspections (PMIs) for all building systems <p>Facilities Repair & Sustainment:</p> <ul style="list-style-type: none"> - Electrical distribution component end-of-life replacement in two quadrants - Electrical distribution substation circuit breaker testing completed for electrical code compliance - Heating, Ventilation, and Air Conditioning (HVAC) Evaporative Cooler end-of-life replacement - Upgraded Basement Area (B79) to support mission essential information management open storage capability - Fire protection system modifications and upgrades completed to meet fire code compliance - Computer Room (2200 Quadrant) air conditioning capacity upgrades completed to meet mission critical capabilities - Elevator end-of-life component replacement and upgrades completed. - Emergency lighting module replacement completed as fire and safety compliance project - Provided emergency response and repair of infrastructure systems as required <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 and 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 a commercial warehouse - Funded Schriever Air Force Base Support Costs (Local Dial Tone, Long Distance, Cable TV, and Grounds Maintenance) <p>Facility Services:</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<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; provide trouble shooting and repair on a critical basis - Installed and reconfigured 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 <p>Decrease in FY 2014 funding is a result of deferring replacement of electrical distribution and heating, ventilation, and air conditioning components to future years.</p> <p>FY 2015 Plans: Host Tenant Support(Electrical, Gas, Sewer, Water, Steam, Chilled Water, Waste Water, Landscaping, and Refuse Removal):</p> <ul style="list-style-type: none"> - 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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) with a response time of 15 minutes after normal duty hours - Conduct preventative maintenance inspections (PMIs) for all building systems <p>Facilities Engineering:</p> <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) - Fund calibration of measuring and monitoring equipment - Fund repair of classified network switches <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 				
Title: Engineering and Event Services		9.558	6.501	6.864
Articles:		-	-	-

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Description: N/A</p> <p>FY 2013 Accomplishments: Mission Assurance and Event Execution Support</p> <ul style="list-style-type: none"> - Implemented baseline technical control for all Missile Defense Integration and Operations Center (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 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 - 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, War gaming, 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 - 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 - 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 - Ballistic Missile Defense Systems (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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - 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 Distributed Multi-Echelon Training System (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) 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"> - Provided on-site technical environment for Ballistic Missile Defense System (BMDS); Watch Officers, Safety Officers, and Information Assurance Officers to execute their duties 24 hours a day, 7 days a week, 365 days a year - Implemented recall procedures to augment subject matter expertise availability during contingencies and major events - Executed tabletop exercises to assess readiness for 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 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"> - Provided overarching contract and financial management support for all JNIC JRDC integrated programs projects - Provided engineering coordination, resource management, and event integration across all 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Event Architecture & Engineering Design:</p> <ul style="list-style-type: none"> - Coordinated design and implementation of technical architectures for all major MDIOC hosted BMDS tests, training and operations - Delivered technical documentation packages for all major BMDS flight tests, ground tests, training and COCOM exercise support - Led requirements coordination and technical architecture enhancements for Ballistic Missile Defense System (BMDS); wargame, exercise and training networks - Updated BMDS end-to-end Combatant Command (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>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>FY 2015 Plans: Mission Assurance and Event Execution Support</p> <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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>a week, 365 days a year</p> <ul style="list-style-type: none"> - 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 - 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 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Component Command-Integrated Missile Defense</p> <ul style="list-style-type: none"> - 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>Program Quality Management, Risk Management, and Earned Value Management</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 - Lead requirements coordination and technical architecture enhancements for Ballistic Missile Defense System 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>(BMDS); wargame, exercise and training networks</p> <ul style="list-style-type: none"> - 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>Title: Operations and Sustainment</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Fund Government Civilian, CSS, Training, Travel, FFRDC - Funded Civilian, Contract Services and Support (CSS) and Federally Funded Research and Development (FFRDC) positions supporting operations and sustainment of all Missile Defense Integration and Operations Center (MDIOC) activities contributing to the mission execution platform - 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 - Developed and coordinated Cross-Domain Solution architectures for high priority Ballistic Missile Defense System (BMDS); testing and contingency deployments - Coordinated MDA leveraged involvement in multi-mission integration opportunities sponsored by external agencies and customers 		<p>4.874</p> <p align="center">Articles:</p> <p align="center">-</p>	<p>6.245</p> <p align="center">-</p>	<p>6.389</p> <p align="center">-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>- Funded Training and Travel</p> <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 <p>FY 2015 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: <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 				
Title: Modeling & Simulation Systems Engineering and Integration		1.466	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 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.</p> <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 2014 Plans: Plans captured in Project MD08, Program Element 0603882C beginning in FY 2014 in the amount of \$1.621 million.</p> <p>FY 2015 Plans: N/A</p>		-	-	-
<p>Title: Infrastructure Systems Repair, Sustainment, and Critical Upgrades</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: 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> <ul style="list-style-type: none"> - Electrical power distribution in two mission quadrants to replace end-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas within the facility (multi-year project) - Electrical distribution non-technical power switchgear scheduled maintenance (first phase) 		- -	3.501 -	7.091 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Heating, Ventilation, and Air Conditioning capacity upgrades to Missile Defense Integration and Operations Center (MDIOC) Computing Hub - Safety compliance project to replace non-compliant Emergency Lighting Modules - Install 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 (multi-year project) <p>FY 2015 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> <ul style="list-style-type: none"> - Electrical power distribution in two mission quadrants to replace - End-of-life systems, increase reliability, improve power distribution efficiency, and redundancy to mission critical areas (multi-year project) - Install 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 (multi-year project) - Electrical Distribution non-technical power switchgear scheduled maintenance (second phase) - Heating, Ventilation, and Air Conditioning end-of-life component replacement and capacity upgrade to improve mission assurance to critical mission areas within the facility (second phase) - Compliance project (first of multiple phases) to modify fire suppression system to meet building code requirements 			
Accomplishments/Planned Programs Subtotals	58.658	48.823	54.605

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603881C: <i>Ballistic Missile Defense Terminal Defense Segment</i>	267.396	255.918	299.598	-	299.598	221.008	288.405	286.421	273.365	Continuing	Continuing
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603893C: <i>Space Tracking and Surveillance System</i>	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603895C: <i>Ballistic Missile Defense System Space Programs</i>	5.977	6.515	6.389	-	6.389	7.112	7.290	7.454	7.665	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603907C: <i>Sea Based X-Band Radar (SBX)</i>	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
• 0603913C: <i>Israeli Cooperative Programs</i>	246.881	283.782	96.803	-	96.803	103.940	106.020	107.929	110.627	Continuing	Continuing
• 0603914C: <i>Ballistic Missile Defense Test</i>	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Infrastructure Systems and Support - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	55.957	24.406		17.378	Nov 2013	20.475	Nov 2014	-		20.475	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC GSA / Leases / Calibration	MIPR	Various (GSA, 50th Space Wing, Warehouses) : Colorado Springs, CO	3.216	1.198		1.240	Nov 2013	0.636		-		0.636	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	42.478	14.818		11.539	Nov 2013	9.947	Nov 2014	-		9.947	Continuing	Continuing	Continuing
Facilities and Maintenance - MDIOC Utilities	MIPR	50th Space Wing : Schriever AFB, CO	6.682	2.338		2.419	Oct 2013	3.203		-		3.203	Continuing	Continuing	Continuing
Engineering and Event Services - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	28.900	9.558		6.501	Oct 2013	6.864	Oct 2014	-		6.864	Continuing	Continuing	Continuing
Operations and Sustainment - FFRDC	FFRDC	MDIOC : Colorado Springs, CO	1.424	0.383		0.360	Oct 2013	0.407	Oct 2014	-		0.407	Continuing	Continuing	Continuing
Operations and Sustainment - Operations & Sustainment	Allot	MDIOC : Colorado Springs, CO	9.439	2.596		3.263	Oct 2013	3.330	Oct 2014	-		3.330	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / Missile Defense Integration and Operations Center (MDIOC)	Project (Number/Name) MD22 / Missile Defense Integration and Operations Center (MDIOC)
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Operations and Sustainment - Support Services	C/FFP	SRS/ManTech/ MiDAESS Multi : Colorado Springs, CO	7.555	1.833		2.481	Oct 2013	2.564	Oct 2014	-		2.564	Continuing	Continuing	Continuing
Operations and Sustainment - Travel and Training	Allot	MDIOC : Colorado Springs, CO	0.335	0.062		0.141	Oct 2013	0.088	Oct 2014	-		0.088	Continuing	Continuing	Continuing
Modeling & Simulation Systems Engineering and Integration - BMDS Architecture	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	4.506	1.466		-		-		-		-	3.537	9.509	-
Infrastructure Systems Repair, Sustainment, and Critical Upgrades - MDIOC NG	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	0.000	-		3.501	Nov 2013	7.091	Nov 2014	-		7.091	Continuing	Continuing	Continuing
Subtotal			160.492	58.658		48.823		54.605		-		54.605	-	-	-

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.

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

Remarks
FY 2012 Plans captured in Project MD01, PE 0603896C

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	160.492	58.658	48.823	54.605	-	54.605	-	-	-

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HVAC repair and sustainment (OSC, BNOSC)																												
Power distribution in one quadrant (Test)																												
Environmental protection/greening (replace evaporative cooler - 1 unit)																												
Increase Ethernet to meet MDA 10GB capacity (Test)																												
Power distribution in two quadrants (Data Center, OSC, BNOSC, MCCF)																												
Install 60 percent of high capacity network fiber cable in MDIOC (Backbone)																												
Power distribution in two quadrants (C2BMC and Modeling & Sim)																												
AST-14 (Israeli Cooperative Intercept Flight Test)																												
Fire/Safety Compliance																												
Power distribution in one quadrant (MDSDC)																												
HVAC repair and sustainment (Data Center)																												
Install remaining high capacity network fiber cable in MDIOC (Backbone)																												
Install 100 percent of high capacity network fiber cable in MDIOC (Sonnet ring - Mission Areas) Completes network fiber installation																												
Increase quadrant communication rooms Power and HVAC capacity (TEST)																												
Global Thunder 13																												
Increase Ethernet to meet MDA 10GB capacity (Ops)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
GTI-04e (VV&A) (System Ground Test)	●																											
Vigilant Shield 13	▲																											
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)			◆																									
FTM-22 E2 (Aegis Intercept Flight Test)			◆																									
PA-04 Performance Assessment 04			▲																									
Terminal Fury 13			▲																									
Global Lightning 13			▲																									
Electrical Power Distribution Upgrade Two Quadrants			✦	✦																								
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)			◆																									

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
HVAC repair and sustainment (OSC, BNOSC)	3	2017	4	2017
Power distribution in one quadrant (Test)	2	2017	3	2017
Environmental protection/greening (replace evaporative cooler - 1 unit)	3	2017	4	2017
Increase Ethernet to meet MDA 10GB capacity (Test)	3	2017	4	2017
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
Power distribution in two quadrants (C2BMC and Modeling & Sim)	1	2018	4	2018
AST-14 (Israeli Cooperative Intercept Flight Test)	1	2014	4	2014
Fire/Safety Compliance	2	2016	3	2016
Power distribution in one quadrant (MDSDC)	2	2017	3	2017
HVAC repair and sustainment (Data Center)	1	2015	4	2015
Install remaining high capacity network fiber cable in MDIOC (Backbone)	2	2015	3	2015
Install 100 percent of high capacity network fiber cable in MDIOC (Sonnet ring - Mission Areas) Completes network fiber installation	1	2015	4	2015
Increase quadrant communication rooms Power and HVAC capacity (TEST)	2	2017	3	2017
Global Thunder 13	1	2013	1	2013
Increase Ethernet to meet MDA 10GB capacity (Ops)	2	2015	3	2015
GTI-04e (VV&A) (System Ground Test)	1	2013	1	2013
Vigilant Shield 13	1	2013	1	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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD22 / <i>Missile Defense Integration and Operations Center (MDIOC)</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
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 Two Quadrants	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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MC22 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC22: <i>Cyber Operations</i>	-	-	0.534	0.537	-	0.537	0.482	0.472	0.635	0.651	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Cyber Defensive Operations	-	0.534	0.537
Articles:	-	-	-
Description: The Missile Defense Integration and Operations Center (MDIOC) conducts Defensive Cyber Operations in the following categories:			
FY 2013 Accomplishments: 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MC22 / <i>Cyber Operations</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>- The MDIOC maintains an Information Assurance (IA) certified workforce through continuous IA training as required by DoD Directive 8570.</p> <p>FY 2015 Plans: Key Management Infrastructure</p> <p>- 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.</p> <p>Information Assurance Training</p> <p>- The MDIOC maintains an Information Assurance (IA) certified workforce through continuous IA training as required by DoD Directive 8570</p>				
Accomplishments/Planned Programs Subtotals		-	0.534	0.537
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				
D. Acquisition Strategy				
N/A				
E. Performance Metrics				
N/A				

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MC22 / <i>Cyber Operations</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Cyber Defensive Operations - Cyber Defensive Operations	C/CPAF	MDIOC/Northrop Grumman Mission Systems : Colorado Springs, CO	0.000	-		0.534	Nov 2013	0.537	Nov 2014	-		0.537	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.534		0.537		-		0.537	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.534	0.537	-	0.537	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	2.841	3.026	2.738	3.388	-	3.388	3.040	3.861	3.641	3.958	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	3.026	2.738	3.388
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	3.026	2.738	3.388

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603904C / <i>Missile Defense Integration and Operations Center (MDIOC)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
--------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities, Operations, and Maintenance	MIPR	Various : Multi: AK, AL, CA, CO, VA	2.600	2.701		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	0.241	-		0.045		0.556		-		0.556	0.241	1.083	-
Program Wide Support - Agency Operations and Support Services	Reqn	Various : Multi: AK, AL, CA, CO, VA	0.000	0.325		2.693	Dec 2013	2.832	Nov 2014	-		2.832	Continuing	Continuing	Continuing
Subtotal			2.841	3.026		2.738		3.388		-		3.388	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	2.841	3.026	2.738	3.388	-	3.388	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603906C / <i>Regarding Trench</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	15.075	8.330	12.464	16.199	-	16.199	10.111	9.569	9.937	10.183	Continuing	Continuing
MD35: <i>Regarding Trench</i>	15.075	8.330	12.464	16.199	-	16.199	10.111	9.569	9.937	10.183	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	11.371	13.864	16.554	-	16.554
Current President's Budget	8.330	12.464	16.199	-	16.199
Total Adjustments	-3.041	-1.400	-0.355	-	-0.355
• Congressional General Reductions	-0.015	-			
• Congressional Directed Reductions	-	-1.400			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-2.082	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-0.944	-	-0.355	-	-0.355

Change Summary Explanation

The FY 2015 reduction reflects a realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603907C / <i>Sea Based X-Band Radar (SBX)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	191.978	23.703	44.478	64.409	-	64.409	57.081	58.975	64.759	63.016	Continuing	Continuing
MX46: <i>Sea Based X-Band Radar Development Support</i>	184.722	23.197	42.143	60.681	-	60.681	53.728	55.278	60.385	58.516	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	7.256	0.506	2.335	3.728	-	3.728	3.353	3.697	4.374	4.500	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 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 2015 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.

A. Mission Description and Budget Item Justification

The SBX is an advanced X-Band radar that provides the capability for mid-course acquisition, tracking, discrimination and hit-assessment 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 provides long-range missile tracking and discrimination capability for the Ballistic Missile Defense System (BMDS) for Homeland Defense against sophisticated Intercontinental Ballistic Missile (ICBM) threats. The SBX is the most capable discrimination sensor in the BMDS and provides valuable support to BMDS flight tests.

The SBX is in a limited test support status, supporting BMDS flight and ground testing while being recallable to an active, operational status when indications and warnings indicate the need for enhanced discrimination. SBX will be located in a Pacific port when not required to be at sea. SBX will maintain vessel certifications for operations at sea as well as software compatibility with the BMDS.

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

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603907C / <i>Sea Based X-Band Radar (SBX)</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	9.730	44.478	54.514	-	54.514
Current President's Budget	23.703	44.478	64.409	-	64.409
Total Adjustments	13.973	-	9.895	-	9.895
• Congressional General Reductions	-0.037	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	18.000	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.436	-			
• SBIR/STTR Transfer	-0.322	-			
• Other Adjustment	-2.232	-	9.895	-	9.895

Change Summary Explanation

The FY 2015 increase of \$9.895 reflects a realignment of funds from the Ballistic Missile Defense Sensors Program Element 0603884C to continue Limited Test Support Status established in FY 2013.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MX46: Sea Based X-Band Radar Development Support	184.722	23.197	42.143	60.681	-	60.681	53.728	55.278	60.385	58.516	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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

The SBX is in a limited test support status, supporting Ballistic Missile Defense System (BMDS) ground and flight testing while maintaining the ability to be recalled 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 maintain vessel certifications for operations at sea and software compatibility 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 2013	FY 2014	FY 2015
Title: Vessel Operations and Support	6.984	20.003	33.952
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
-Sustained the SBX in limited test support status			
-Completed annual and special surveys to maintain US Coast Guard certification			
-Activated for operational tasking and deployment in April/May 2013			
-Successfully participated in Ballistic Missile Defense System (BMDS) Ground Based Mid-Course Defense Intercept Flight Test (FTG-07)			
-Completed data collection for software development during Glory Trip (GT) 207, GT-208-1 and GT-209			
FY 2014 Plans:			
-Sustain the SBX in limited test support status			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-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>FY 2015 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-11) -The increase reflects the recurring 5-year vessel U.S. Coast Guard and American Bureau of Shipping recertification and special survey effort</p>				
Title: System Force Protection		2.700	4.498	3.261
Description: N/A		Articles: -	-	-
FY 2013 Accomplishments: -Provided force protection for SBX in limited test support status				
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				
FY 2015 Plans: -Provide force protection for SBX in limited test support status				
Title: XBR Operations and Support		13.513	17.642	23.468
Description: N/A		Articles: -	-	-
FY 2013 Accomplishments: -Sustained the X-Band Radar (XBR) in limited test support status -SBX activated for operational tasking and deployment in April/May 2013 -Successfully participated in Ballistic Missile Defense System (BMDS) Ground Based Mid-Course Defense Intercept Flight Test (FTG-07)				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Completed data collection for software development during Glory Trip (GT) 207, GT-208-1 and GT-209 -Delivered improved software for FTG-07 flight test (B2.2.1.2.5) -Delivered improved software for fielding in FY2015 (B3.2.0) -SBX manual search fence/goal-tending developed and demonstrated in hardware-in-the-loop testing during FAST AIM 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 FY 2015 Plans: -Operate and sustain the X-Band Radar (XBR), operate and sustain SBX communications systems, and perform mission integration functions in limited test support status. Limited software sustainment will maintain system capability with the BMDS. - Field additional XBR capability to the Warfighter (Build 3 software) with the BMDS Capability Update -Participate in Ballistic Missile Defense System (BMDS) Ground Based Mid-Course Defense Intercept Flight Test (FTG-11) -The amount requested in FY 2015 reflects an annualized funding requirement based on evolving requirements for maintaining SBX in Limited Test Support Status			
Accomplishments/Planned Programs Subtotals	23.197	42.143	60.681

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• 0603882C: Ballistic Missile Defense Midcourse Defense Segment	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: Ballistic Missile Defense Sensors	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603891C: Special Programs - MDA	235.272	276.613	310.261	-	310.261	412.408	357.545	329.758	272.234	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing

Remarks

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks

N/A

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Vessel Operations and Support - Fuel	MIPR	Gryphon : MD	18.968	1.484		2.173	Nov 2013	4.515	Nov 2014	-		4.515	Continuing	Continuing	Continuing
Vessel Operations and Support - Navy Transition Office	MIPR	US Navy : AL	5.424	0.308		-		1.619	Nov 2014	-		1.619	Continuing	Continuing	Continuing
Vessel Operations and Support - SBX Operations & Support (Vessel)	C/FFP	IAS : HI/NJ	61.723	4.036		12.044	Nov 2013	17.639	Oct 2014	-		17.639	Continuing	Continuing	Continuing
Vessel Operations and Support - SBX Vessel Maintenance	C/FFP	IAS : HI/NJ	8.056	0.488		2.941	Nov 2013	5.289	Oct 2014	-		5.289	Continuing	Continuing	Continuing
Vessel Operations and Support - Vessel Mission Integration	C/FFP	TBD : AL/HI	16.511	0.668		2.845	Nov 2013	4.890	Dec 2014	-		4.890	Continuing	Continuing	Continuing
System Force Protection - Force Protection	SS/CPFF	TBD : Hi	9.484	2.700		4.498	Aug 2014	3.261	Oct 2014	-		3.261	Continuing	Continuing	Continuing
XBR Operations and Support - SBX Communications Support	SS/CPIF	Boeing : AL/HI	0.000	1.744		2.601	Nov 2013	2.225	Dec 2014	-		2.225	Continuing	Continuing	Continuing
XBR Operations and Support - XBR Operations & Support	SS/CPIF	Raytheon : AL/AK/HI	64.556	11.769		15.041	Nov 2013	21.243	Nov 2014	-		21.243	Continuing	Continuing	Continuing
Subtotal			184.722	23.197		42.143		60.681		-		60.681	-	-	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	184.722	23.197	42.143	60.681	-	60.681	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MX46 / Sea Based X-Band Radar Development Support
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTG-06b (GM Intercept Flight Test)						▲																						
FTG-09 (GM Intercept Flight Test)										▲																		
FTG-15 (GM Intercept Flight Test)															▲													
FTG-13 (OTA Intercept Flight Test)																												
FTG-11 (GM Intercept Flight Test) (Salvo)																								▲				
FTG-17 (GM Intercept Flight Test)																												▲

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / <i>Sea Based X-Band Radar (SBX)</i>	Project (Number/Name) MX46 / <i>Sea Based X-Band Radar Development Support</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTG-06b (GM Intercept Flight Test)	2	2014	2	2014
FTG-09 (GM Intercept Flight Test)	2	2015	2	2015
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
FTG-11 (GM Intercept Flight Test) (Salvo)	4	2018	4	2018
FTG-17 (GM Intercept Flight Test)	3	2019	3	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MD40 / Program-Wide Support
--------------------------------------------------	----------------------------------------------------------------------------------------	-------------------------------------------------------------

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	7.256	0.506	2.335	3.728	-	3.728	3.353	3.697	4.374	4.500	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Program Wide Support	0.506	2.335	3.728
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	0.506	2.335	3.728

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / <i>Sea Based X-Band Radar (SBX)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603907C / Sea Based X-Band Radar (SBX)	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities, Operations and Maintenance	MIPR	Various : Multi: AK, AL, CA, CO, VA	0.000	-		2.298		3.300	Jan 2015	-		3.300	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	0.000	0.053		0.037	Jan 2014	0.428		-		0.428	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Other Agency Services (MIPRs)	MIPR	Various : Multi: AL, CA, CO, VA	0.000	0.027		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (CPAF)	C/CPAF	Northrop Grumman : CO	7.256	0.285		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various : Multi: VA, WA	0.000	0.141		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services (Reqn)	Reqn	Dept of Labor : VA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			7.256	0.506		2.335		3.728		-		3.728	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.256	0.506	2.335	3.728	-	3.728	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	607.454	246.881	283.782	96.803	-	96.803	103.940	106.020	107.929	110.627	Continuing	Continuing
MD20: <i>Israeli Upper Tier</i>	176.204	68.637	74.707	54.368	-	54.368	55.660	56.773	57.795	59.240	Continuing	Continuing
MD26: <i>Israeli ARROW Program</i>	164.178	40.753	44.363	10.701	-	10.701	11.142	11.365	11.570	11.859	Continuing	Continuing
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	267.072	137.491	149.712	31.734	-	31.734	37.138	37.882	38.564	39.528	Continuing	Continuing
MD83: <i>Iron Dome</i>	-	-	15.000	-	-	-	-	-	-	-	-	15.000

MDAP/MAIS Code: 362

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

Note

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 four major projects with Israel to develop and improve their indigenous capability to defend against short and medium range ballistic missiles. These include Upper Tier Interceptors (MD20), the Iron Dome Program (MD83), the Arrow Weapon System (MD26), and the Short-Range Ballistic Missile Defense, also known as the David's Sling Weapon System (MD34). 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 Interceptor Project (UTI)(MD20):

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 is to complete and demonstrate Upper Tier design and continue acquisition for Long Lead Initial Lot Production (ILP) with first unit delivery in FY 2016.

Iron Dome (ID)(MD83):

Iron Dome is a mobile all-weather air defense system developed by Rafael Advanced Defense Systems. The system is designed to intercept and destroy short-range rockets and artillery shells whose trajectory would take them to a populated area.

FY 2014 funding is for non-recurring engineering costs in connection with the establishment of a capacity for co-production in the United States. Industry of the United States shall produce parts and components for the Iron Dome short-range rocket defense program. Congressional language also states "That funds made available

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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under this provision for production of missiles and missile components may be transferred to appropriations available for the procurement of weapons and equipment, to be merged with and to be available for the same time period and the same purposes as the appropriation to which transferred: Provided further, That the transfer authority provided under this provision is in addition to any other transfer authority contained in this Act."

Israeli Arrow Weapon System (AWS)(MD26):

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 Pine (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 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)(MD34):

SRBMD, also known as The David's Sling Weapon System (DSWS), is designed to counter short range rockets and missiles and will be integrated into the Israeli Missile Defense Architecture adding another layer of defense to the current Arrow System. Block 1 capability will enhance the short range rocket and missile defense capability. Block 2 will add capability to defend against medium range and cruise missiles. Block 3 will provide robust defense capability and add significant detection capability to the Israeli Air Defense Architecture The David's Sling Weapon System (DSWS) includes the Stunner Interceptor, Missile Firing Unit (MFU), Multi-Mission Radar (MMR), Launch Site Controller (LSC) and the Golden Almond Battle Management Center (BMC). The near term objectives are completion of Block 1 development, demonstrate system capability and flight test, and procure material of Initial Lot Production (ILP) utilizing RDT&E funding and field the system to the Israeli Air Force for first unit delivery in 2015.

B. Program Change Summary (\$ in Millions)	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	99.836	95.782	96.803	-	96.803
Current President's Budget	246.881	283.782	96.803	-	96.803
Total Adjustments	147.045	188.000	-	-	-
• Congressional General Reductions	-0.355	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	168.900	188.000			
• Congressional Directed Transfers	-	-			
• Reprogrammings	0.054	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-21.554	-	-	-	-

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> / BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>
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Change Summary Explanation

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD20: <i>Israeli Upper Tier</i>	176.204	68.637	74.707	54.368	-	54.368	55.660	56.773	57.795	59.240	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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.

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, material procurement to include initial lot production, and integration of spiral software development for 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 procurement of the Silver Sparrow Air-Launched Target which is necessary to validate the performance of the Arrow 3 Missile and related Block 5 spiral development activities.

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 2013	FY 2014	FY 2015
<p>Title: Upper Tier Interceptor</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Conducted Arrow-3 Fly-Out #1 which demonstrated the fundamental performance of the Arrow-3 energetics, validating kinematic performance while also collecting data against the new Electro-Optical Seeker. -Conducted 4 Element Level Knowledge Point (KP) demonstrations (35% of KPs completed to date) to provide critical data to assess viability of component design. -Conducted test preparations for second interceptor fly-out test of the Arrow-3 Interceptor. -Completed data reduction and analysis for the first interceptor fly-out test of the Arrow-3 Interceptor. -Conducted algorithm design review for Interceptor fly-out Test #2 to verify requirements. 	<p>68.637</p> <p>-</p>	<p>74.707</p> <p>-</p>	<p>54.368</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Conducted Silver Sparrow Long Range Target fly out test.			
<i>FY 2014 Plans:</i>			
-Conduct Interceptor Fly-out Test #2 of the Arrow-3 Interceptor.			
-Complete data reduction and analysis for the Interceptor Fly-out Test #2 of the Arrow-3 Interceptor.			
-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.			
-Initiate procurement of Initial Lot Production assets.			
<i>FY 2015 Plans:</i>			
-Conduct Interceptor Intercept Test #1 of the Arrow-3 Interceptor.			
-Conduct 4 Element Level Knowledge Point demonstrations to provide critical data to assess viability of component design.			
-Conduct algorithm design review for Intercept Test Number #2 to verify requirements.			
-Continue procurement of Initial Lot Production assets.			
Accomplishments/Planned Programs Subtotals	68.637	74.707	54.368

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

N/A

Remarks

D. Acquisition Strategy

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 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. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. In regard to the Upper Tier Interceptor, IMoD will contract with Israel Aerospace Industries (IAI). IAI subcontracts with Israeli and U.S. companies.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>

E. Performance Metrics

Earned Value Management System (EVMS)

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Upper Tier Interceptor - Upper Tier Interceptor	C/CPFF	Israel Aerospace Industries (IAI) : Israel	176.204	68.637		74.707	Dec 2013	54.368	Dec 2014	-		54.368	Continuing	Continuing	Continuing
Subtotal			176.204	68.637		74.707		54.368		-		54.368	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	176.204	68.637	74.707	54.368	-	54.368	-	-	-

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
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 #2 - FY 2014					✦	✦	✦	✦																				
Israeli Cooperative Arrow 3 Interceptor Test #1- FY 2015									✦	✦	✦	✦																
Israeli Cooperative Arrow 3 Interceptor Test #2- FY 2016													✦	✦	✦	✦												
Israeli Cooperative Arrow 3 Interceptor Test #3- FY 2017																	✦	✦	✦	✦								
Israeli Cooperative Arrow 3 Interceptor Test #4- FY 2018																					✦	✦	✦	✦				
Israeli Cooperative Arrow 3 Interceptor Test #5- FY 2019																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD20 / <i>Israeli Upper Tier</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
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 #2 - FY 2014	1	2014	4	2014
Israeli Cooperative Arrow 3 Intercept Test #1- FY 2015	1	2015	4	2015
Israeli Cooperative Arrow 3 Intercept Test #2- FY 2016	1	2016	4	2016
Israeli Cooperative Arrow 3 Intercept Test #3- FY 2017	1	2017	4	2017
Israeli Cooperative Arrow 3 Intercept Test #4- FY 2018	1	2018	4	2018
Israeli Cooperative Arrow 3 Intercept Test #5- FY 2019	1	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD26: <i>Israeli ARROW Program</i>	164.178	40.753	44.363	10.701	-	10.701	11.142	11.365	11.570	11.859	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note
N/A

A. Mission Description and Budget Item Justification

This project includes funding for the Arrow Weapon Improvement System (ASIP), Israeli Test Bed (ITB) and the Israeli Systems Architecture and Integration (ISA&I).

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. Ballistic Missile Defense System 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 2013	FY 2014	FY 2015
Title: Arrow System Improvement Program	34.391	38.001	4.339
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
-Completed data reduction and analysis for flight test in Israel to validate models and simulations.			
-Conducted interoperability Combatant Command (COCOM) Exercise test with European Command (EUCOM).			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Conducted Block 5 Preliminary Design Review.</p> <p>-Fielded Block 4.1 and Super Green Pine with improved Discrimination capability to the Israeli Air Force.</p> <p>-Conducted Silver Sparrow Target Flight Test to further validate the capabilities of the Super Green Pine and Green Pine discrimination and the new target in preparation for future Arrow-2 and Arrow-3 intercept tests.</p> <p>FY 2014 Plans:</p> <p>-Conduct Block 4.2 Critical Design Review.</p> <p>-Conduct Juniper Cobra 14 interoperability COCOM Exercise test with EUCOM</p> <p>-Conduct Intercept Test with improved discrimination capability to verify Block 4.1.</p> <p>-Continue Long Range Detection Suite Development</p> <p>-Continue Block 5 Arrow Weapon System Integration</p> <p>FY 2015 Plans:</p> <p>-Continue Block 5 Arrow Weapon System integration.</p>				
<p>Title: Israeli Test Bed (ITB)</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>-Conducted Human in the Loop (HIL) experiment on regional defense concepts.</p> <p>-Conducted HIL experiment Arrow 2/3 and related Block 5 Integration including integration of external sensors and battle management.</p> <p>FY 2014 Plans:</p> <p>-Conduct HIL experiment with warfighters to further define Techniques, Tactics and Procedures (TTPs) and CONOPS</p> <p>-Conduct exercise with warfighters to further refine TTPs and Concept of Operations (CONOPS).</p> <p>FY 2015 Plans:</p> <p>-Conduct HIL experiment with warfighters to integrate David's Sling Weapon System (DSWS) and Iron Dome into Lower Tier Techniques, Tactics and Procedures (TTPs) and CONOPS.</p> <p>-Conduct HIL experiment with warfighters to integrate Block 5 Arrow Weapon System Techniques, Tactics and Procedures (TTPs) and CONOPS.</p> <p>-Conduct Austere Challenge 15 interoperability test</p>		<p>Articles:</p> <p>3.535</p> <p>-</p>	<p>3.535</p> <p>-</p>	<p>3.535</p> <p>-</p>
<p>Title: Israeli Systems Architecture and Integration (ISA&I)</p>		<p>Articles:</p> <p>2.827</p> <p>-</p>	<p>2.827</p> <p>-</p>	<p>2.827</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Description: N/A</p> <p>FY 2013 Accomplishments: -Continued to develop U.S.-Israeli operational exercise design and assessment, and interoperability special studies on regional threats and growth path options.</p> <p>FY 2014 Plans: -Conduct studies and analysis to identify the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options.</p> <p>FY 2015 Plans: - Conduct studies and analysis to identify the preferred missile defense architecture and reference threat for 10-15 year future epoch and interoperability special studies on regional threats and growth path options.</p>			
Accomplishments/Planned Programs Subtotals	40.753	44.363	10.701

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

N/A

Remarks

D. Acquisition Strategy

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. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. 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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Arrow System Improvement Program - Arrow System Improvement Program (ASIP)	C/CPFF	Israel Aerospace Industries (IAI) : Israel	141.460	34.391		38.001	Dec 2013	4.339	Dec 2014	-		4.339	Continuing	Continuing	Continuing
Israeli Test Bed (ITB) - Israeli Test Bed	C/FFP	Elbit Systems : Israel	14.140	3.535		3.535	Oct 2013	3.535	Oct 2014	-		3.535	Continuing	Continuing	Continuing
Israeli Systems Architecture and Integration (ISA&I) - ISA&I	C/FFP	Wales LTD : Israel	8.578	2.827		2.827	Oct 2013	2.827	Oct 2014	-		2.827	Continuing	Continuing	Continuing
Subtotal			164.178	40.753		44.363		10.701		-		10.701	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	164.178	40.753	44.363	10.701	-	10.701	-	-	-

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Three Israeli Test Bed Experiments FY 2013	✦	✦	✦	✦																								
Israeli Test Bed Exercise FY 2013	✦	✦	✦	✦																								
Israeli Test Bed Human in the Loop Experiment with Warfighter					✦	✦	✦	✦																				
Intercept Test with Arrow 2					✦	✦	✦	✦																				
Israeli Test Bed Exercise with Warfighter					✦	✦	✦	✦																				
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2015									✦	✦	✦	✦																
Israeli Test Bed Experiments FY 2015									✦	✦	✦	✦																
Israeli Test Bed Experiments FY 2016													✦	✦	✦	✦												
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2016													✦	✦	✦	✦												
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017																	✦	✦	✦	✦								
Israeli Test Bed Experiments FY 2017																	✦	✦	✦	✦								
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2018																					✦	✦	✦	✦				
Israeli Test Bed Experiments FY2018																					✦	✦	✦	✦				
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2019																									✦	✦	✦	✦
Israeli Test Bed Experiments FY2019																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD26 / <i>Israeli ARROW Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Three Israeli Test Bed Experiments FY 2013	1	2013	4	2013
Israeli Test Bed Exercise FY 2013	1	2013	4	2013
Israeli Test Bed Human in the Loop Experiment with Warfighter	1	2014	4	2014
Intercept Test with Arrow 2	1	2014	4	2014
Israeli Test Bed Exercise with Warfighter	1	2014	4	2014
Israeli Test Bed Exercise to include Ground Test (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 Ground Test (GT) Support FY 2016	1	2016	4	2016
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2017	1	2017	4	2017
Israeli Test Bed Experiments FY 2017	1	2017	4	2017
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2018	1	2018	4	2018
Israeli Test Bed Experiments FY2018	1	2018	4	2018
Israeli Test Bed Exercise to include Ground Test (GT) Support FY 2019	1	2019	4	2019
Israeli Test Bed Experiments FY2019	1	2019	4	2019

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency										Date: March 2014		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>				Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD34: <i>Short Range Ballistic Missile Defense (SRBMD)</i>	267.072	137.491	149.712	31.734	-	31.734	37.138	37.882	38.564	39.528	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

The 2006 summer conflict between Israel and Hezbollah underscored the strategic effect of short-range, inexpensive ballistic missile attacks on civilian populations. The goal of the Israeli Short Range Ballistic Missile Defense (SRBMD) program is to provide an affordable SRBM and large caliber rocket defense capability. In March 2005 the U.S. and Israel initiated a joint feasibility study of a low-cost SRBMD capability that will complement the existing Arrow Weapon System. The David's Sling Weapon System (DSWS) was selected in May of 2006. The current Program Agreement for Block 1 utilizes RDT&E funding to procure material for Initial Lot Production (ILP). Block 1 will provide capability against large caliber rockets and short range ballistic missiles. The DSWS is comprised of the Stunner Interceptor, Golden Almond Battle Management Center, the Multi-Mission Radar, Launch Site Controller and the Missile Firing Unit.

Under the U.S.-Israeli Project Agreement signed in September 2008. The DSWS Program is jointly managed by the U.S. Missile Defense Agency and the Israeli Missile Defense Organization. Responsibilities and cost share are specified in the Project Agreement. Development costs are equitably shared between the U.S. and Israel.

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

	FY 2013	FY 2014	FY 2015
Title: SRBMD Program	137.491	149.712	31.734
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
-Completed David's Sling Test-1 (DST-1) Flight Test.			
-Completed Radar Field Test #2.			
-Completed data analysis of intercept test to validate Block 1 functionality.			
-Completed Test Events for 2 Knowledge Points (33% of KPs completed to date) which provide critical data to assess viability of subsystem and system design and intercept cost.			
-Continued Block 2 Development which expands the DSWS threat set.			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Continued Block 3 Development which enables the engagement of an expanded threat set. -Completed 3 Rocket Pulse Motor (RPM) ground testing. -Completed critical design review of RF seeker. -Delivered the first Missile Fire Unit. -Delivered the second Multi Mission Radar. -Delivered the fist launch site controller. -Completed missile canister validation in Safe Separation Test 3 (SST-3). -Completed production readiness review of the booster assembly. -Completed production readiness review of the guidance electronic unit. -Completed production readiness review of the stunner ignition safety device. -Completed production readiness review of the detonation cord and manifold. -Completed production readiness review of the booster ignition safety device. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Conduct Radar Field Test #3. -Conduct ground test and simulations to validate missile and system performance to complete 4 Knowledge points and provide data to assess subsystem and system design robustness. -Complete production readiness review of the David's Sling Weapon System Sub-Components. -Conduct 1 Block One system intercept test with production representative interceptor to validate the Block 1 system performance. -Complete Initial Lot Production (ILP) delivery of first Battle Management Center. -Complete Block 2 System Preliminary Design Review (PDR). <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> -Complete production readiness review of the David's Sling Weapon System Sub-Components. -Deliver Initial Lot Production (ILP) Interceptors to the Israeli Air Force. -Deliver Battle Management and Sensor capability to the Israeli Air Force. -Conduct 1 Block One system intercept test with production representative interceptor to validate the Block 1 system performance. 				
Accomplishments/Planned Programs Subtotals		137.491	149.712	31.734
C. Other Program Funding Summary (\$ in Millions)				
N/A				
Remarks				

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>

D. Acquisition Strategy

The Short Range Ballistic Missile Defense (SRBMD) 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 DoD U.S. Israeli Cooperative Program Office jointly manages the SRBMD 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. Contracts are awarded by IMoD or MDA dependent on what is most advantageous to the Joint Governments. For the Stunner Interceptor, Rafael Advanced Systems (an Israeli company), subcontracts to Raytheon Missile Systems for Stunner interceptor components.

E. Performance Metrics

Earned Value Management System (EVMS)

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SRBMD Program - SRBMD Program	C/CPFF	Rafael : Israel	267.072	137.491		149.712	Dec 2013	31.734	Dec 2014	-		31.734	Continuing	Continuing	Continuing
Subtotal			267.072	137.491		149.712		31.734		-		31.734	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	267.072	137.491	149.712	31.734	-	31.734	-	-	-

Remarks
Contract cost reflect U.S. contribution only.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
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																					✦	✦	✦	✦				
System Flight Test #10 FY 2019																									✦	✦	✦	✦

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD34 / <i>Short Range Ballistic Missile Defense (SRBMD)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
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
System Flight Test #10 FY 2019	1	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD83 / <i>Iron Dome</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD83: <i>Iron Dome</i>	-	-	15.000	-	-	-	-	-	-	-	-	15.000
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The Iron Dome defense system was built by Rafael Advanced Systems funded by the Israeli Ministry of Defense (IMoD). Iron Dome was declared operational and initially deployed in March 2011 and successfully intercepted a Grad rocket launched from Gaza in April 2011. In 2011, the United States of America provided \$203M in procurement funds to spur the production and deployment of additional Iron Dome Batteries. In addition to the initial funding, \$70M was provided in 2012 and \$196M was provided in 2013.

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

	FY 2013	FY 2014	FY 2015
Title: Iron Dome	-	15.000	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: N/A			
FY 2014 Plans: - Establish a capacity for co-production in the United States by industry of the United States of parts and components for the Iron Dome short-range rocket defense program			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	-	15.000	-

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

N/A

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603913C / <i>Israeli Cooperative Programs</i>	Project (Number/Name) MD83 / <i>Iron Dome</i>

D. Acquisition Strategy

The Iron Dome project is an agreement between the U.S. and Israel creates a joint program office to manage this program. The DoD U.S. Israeli Cooperative Program Office jointly manages the Iron Dome program with IMoD to ensure that all systems are delivered on time, on budget, and meet the needs of the warfighter.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	443.825	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
MT04: <i>BMDS Test Program</i>	436.664	417.738	318.907	366.186	-	366.186	322.925	349.373	393.123	387.479	Continuing	Continuing
MC04: <i>Cyber Operations</i>	-	-	0.500	0.514	-	0.514	0.523	0.532	0.546	0.560	Continuing	Continuing
MD40: <i>Program Wide Support</i>	7.161	20.376	18.586	19.782	-	19.782	17.363	20.015	24.043	25.155	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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); Director, Developmental Test and Evaluation (DT&E); and Commander, Joint Functional Component Command for Integrated Missile Defense (JFCC-IMD) 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. 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:
- Direct the testing required to VV&A MDA's M&S.
- Plan tests according to BMDS and Element objectives.
- Develop MDA test policy.
- Execute BMDS flight and ground 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>
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- 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.

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). 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. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	454.400	375.866	436.063	-	436.063
Current President's Budget	438.114	337.993	386.482	-	386.482
Total Adjustments	-16.286	-37.873	-49.581	-	-49.581
• Congressional General Reductions	-0.599	-0.273			
• Congressional Directed Reductions	-	-37.600			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	20.268	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-35.955	-	-49.581	-	-49.581

Change Summary Explanation

The FY 2015 reduction of \$49.581 million reflects modified requirements of the Integrated Master Test Program based on fact-of-life adjustments to Missile Defense Agency's test program, including test event schedule changes and test personnel reductions.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT04: <i>BMDS Test Program</i>	436.664	417.738	318.907	366.186	-	366.186	322.925	349.373	393.123	387.479	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

In FY 2014 and FY 2015, test support costs are captured in the Program Planning and Operations accomplishment. This change ensures the Flight & Ground Test accomplishments reflect the actions and costs captured in the Integrated Master Test Plan.

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.

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 2013	FY 2014	FY 2015
Title: Program Planning and Operations	134.777	121.229	123.468
Articles:	-	-	-
Description: N/A			
FY 2013 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) data base.			
-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			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>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> <ul style="list-style-type: none"> -Managed the MDA Data Center Program and its library, operations, and infrastructure providing centralized data management, archival, and distribution services. -Performed as Information Assurance (IA) manager for test data management networks and infrastructure. -Developed and implemented test policy, standards, directives, and procedures for creating unified BMD test processes. -Coordinated budget planning and execution activities as well as manpower activities. -Conducted flight and ground planning, design and analysis efforts; test design feasibility assessments; software development required to support flight and ground test design/analysis; and Signatures Working Group activities. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Requirement decrease is a result of approved IMTP changes. -Plan and design a more affordable and executable BMDS test program based on engineering analysis of developmental and operational test requirements. -Deliver Integrated Master Test Plans, coordinated with MDA stakeholders, that are affordable and executable, and that meet Warfighter needs and National Security commitments. -Conduct a bottoms-up review of the test program with special focus on reducing both fixed and variable costs. -Serve as the MDA Test Interface/Liaison with the DOT&E, DE, and OTA. Identify and resolve Operational Test Agency (OTA) issues. -Provide strategic technical planning support for the Test and Evaluation Standing Committee (TESC). -Develop and implement test policy, standards, directives, and procedures for creating unified BMD test processes. -Coordinate budget planning and execution activities as well as manpower activities. -Conduct flight and ground planning, design and analysis efforts; test design feasibility assessments; software development required to support Flight and Ground test design/analysis; and Signatures Working Group activities. -Inspire professional excellence and a diverse and professional workforce -Capitalize on the creativity and innovation of the Nation's universities --Continue University outreach with the United States Air Force Academy -Update and maintain the classified TRMP-T data base. -Develop, maintain, and integrate test tools to support Truth Data Requirements Documents, Truth Data Packages, Integrate 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. -Managed the MDA Data Center Program and its library, operations, and test labs analysis infrastructure providing centralized data management, archival, and distribution services. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Utilize the Program Integration Center for analytical needs in support of Flight and Ground Test Activities</p> <p>FY 2015 Plans:</p> <p>-Develop, update, and coordinate the Integrated Master Test Plan (IMTP), including MDA Test Baseline development, management and affordability.</p> <p>-Serve as the MDA Test Interface/Liaison with the Director, Operational Test and Evaluation (DOT&E), Director for Engineering, Missile Defense Agency (MDA/DE) and Operational Test Agency (OTA). Identify and resolve OTA issues.</p> <p>-Provide strategic technical planning support for the Test and Evaluation Standing Committee (TESC).</p> <p>-Update and maintain the classified Test Resources Mission Planning Tool (TRMP-T) data base.</p> <p>-Develop, maintain, and integrate test tools 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>-Support pre and post-flight test mission communications to include fulfillment of Government Furnished Equipment/Government Furnished Services requirements and data analysis.</p> <p>-Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight Test Programs.</p> <p>-Provide end-to-end test cost oversight on flight tests.</p> <p>-Provide System Test Lab support to the engineering, accreditation, operations and maintenance of Flight and Ground Test Programs .</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 Information Assurance (IA) activities 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>-Conduct flight and ground planning, design and analysis efforts; test design feasibility assessments; software development required to support flight and ground test design/analysis; and Signatures Working Group activities.</p> <p>-Inspire professional excellence and a diverse and professional workforce.</p> <p>-Capitalize on the creativity and innovation of the Nation's universities.</p> <p>--Continue University outreach with the United States Air Force Academy</p>			
<p>Title: Flight Test</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p>	109.485 -	22.122 -	73.853 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Successfully executed Flight Test Integrated (FTI)-01, the largest missile defense flight test in history, which engaged five targets simultaneously.</p> <p>Successfully conducted FTO-01, a demonstration of the Agency's integrated regional missile defenses using an operationally realistic scenario where uniformed personnel normally assigned to the Aegis Ballistic Missile Defense (BMD) and Terminal High Altitude Area Defense (THAAD) systems in a real-world situation conducted the test. FTO-01 was a very challenging, no-notice, live-fire test event involving the near simultaneous launch of two medium-range ballistic missile targets and a rare opportunity to exercise at the Ballistic Missile Defense System (BMDS) shoot-look-shoot defense.</p> <p>In addition to the successful execution of FTI-01 and FTO-01, participated in the following flight tests during FY 2013: Glory Trip (GT)-206, GT-207, GT-209, GT-208-1, Aegis Flight Test (FTM)-20, Patriot Flight Test (FTP)-07, Ground Based Midcourse Non-Intercept Test CTV-01, FTM-19, Ground Based Midcourse Defense Flight Test (FTG)-07, FTM-21, and FTP-08.</p> <ul style="list-style-type: none"> -Completed test planning for Ballistic Missile Defense System (BMDS) Flight Test events as shown in Exhibit R-4 Schedule. -Identified and executed focused investments in the BMDS test infrastructure. -Conducted mission planning, logistics, and range coordination activities, executed target missions, collected and analyzed target system data, provided communications security equipment and management. -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. -Identified, monitored and developed burn down plans for target system mission risks for all FY 2013 BMDS missions as defined in the Integrated Master Test Plan (IMTP). <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Continue efforts as listed under FY 2013 plans. -Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes. -Continue data collection plan in accordance with IMTP to capture data required for to verify and validate models and simulations supporting accreditation. -Complete planning and successful execution of FTM-22, a lethal engagement of a Medium Range Ballistic Missile target using an Aegis BMD 4.0.2 ship and Standard Missile-3 Block IB (SM-3 Blk IB) missile. -Complete planning and successful execution of FTX-18, a simulated engagement of a raid of three Short Range Ballistic Missile targets using an Aegis BMD 4.0.2 ship and simulated SM-3 Blk IB missiles. -Complete planning and successful execution of FTG-06b, a long interceptor time-of-flight, medium closing velocity engagement of an Intermediate Range Ballistic Missile target using a Capability Enhancement-II Ground Based Interceptor. -Complete planning and successful execution of System Pre-Mission Testing supporting a FTG-06b feasibility assessment and risk reduction. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
<p>-Support preliminary efforts in preparation for the demonstration of 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>FY 2015 Plans:</p> <p>-Increase due to updated requirements for FTO-02.</p> <p>--Conduct FTO-02, a campaign of operational flight tests, a demonstration of the Agency's European Phased Adaptive Approach for Missile Defense Phase 2 architecture. FTO-02 will demonstrate system functionality of Aegis Ashore, AN/TPY-2 in the forward deployed mode (FMB) supported by a command and control architecture consisting of SBIRS/DSP and C2BMC. Additionally, uniformed personnel will operate the system under operationally realistic conditions.</p> <p>--Conduct FTO-02 E2, a demonstration of the Agency's integrated regional missile defenses using an operationally realistic scenario where uniformed personnel normally assigned to the Aegis Ballistic Missile Defense (BMD) and Terminal High Altitude Area Defense (THAAD) systems in a real-world situation will execute the test. FTO-02 E2 will demonstrate system functionality of Aegis BMD (Aegis-at-Sea), Terminal High Altitude Area Defense (THAAD), and Patriot supported by a sensor command and control architecture consisting of SBIRS/DSP and a C2BMC suite.</p> <p>-Conduct target test engineering, mission logistics, and launch operations with consistent test expertise to support operational and developmental flight testing across the BMDS Test Program in accordance with the IMTP in various test Major Range and Test Facilities (MRTF).</p> <p>-Develop flight test training requirements for Test Directors and other console operators.</p> <p>-Coordinate and maintain execution support requirements with all stakeholders.</p> <p>-Identify and Execute mission risks, and implement mitigation practices as required to ensure safe & successful test outcomes.</p> <p>-Provide Failure Response Team and ensures implementation of response plan. Captures lessons learned for process improvement.</p> <p>-Train test personnel and track/maintain training records for all test personnel.</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, perform final target system integration and execute target missions, provided communications security equipment and management for BMDS Flight Test events as shown in Exhibit R-4 Schedule.</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>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-Identify, monitor and develop burn down plans for target system mission risks for all FY2015 BMDS missions as defined in the IMTP.			
<p>Title: Ground Test</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Completed test planning for Ballistic Missile Defense System (BMDS) Ground Test events as shown in Exhibit R-4 Schedule. -Completed hardware and software testing, truth drivers and framework integration, formal execution runs and official data collection of the following test events: <ul style="list-style-type: none"> *Fast Assurance Hardware-in-the-Loop (HWIL) *Fast Eagle Increment 2 (Distributed); Test based on one hundred percent Warfighter requirements *Fast Aim (HWIL) *Ground Test Integration(GTI)-04e Part 1a (HWIL) -Completed hardware and software benchmark testing and truth driver and framework integration of GTI-04e Part 2 (BMDS Integrated Ground Test). -Continued development of a dedicated regional test bed and communication nodes. -Delivered system-level and test specific execution, mission assurance, logistics execution, communications support, and test equipment. -Delivered ground test planning designs, scenarios, feasibility assessments, test architectures, and test configurations. -Initiated detailed test planning for the following BMDS Distributed Ground Tests: <ul style="list-style-type: none"> *Fast Phoenix *Fast Falcon *Fast Exchange Distributed *Fast Osprey *Ground Test Development (GTD)-04e Part 2 *Ground Test (GT)-06 events -Requirements decreased due to approved Integrated Master Test Plan (IMTP) changes. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> -Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes. -Complete first operational test (OT) series of tests in Ground Test Campaign 04e delivering both Operational Testing of USPACOM regional defense and Operational Assessments of USNORTHCOM and USPACOM BMDS Homeland Defense. 	13.905	9.802	5.256
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Conduct target test engineering, mission logistics, and launch operations with consistent test expertise to support operational and developmental flight testing.</p> <p>-Procure, maintain, and manage test resource infrastructure, and provide trained personnel to integrate test resources into each test event for the BMDS Test Program.</p> <p>-Execute data management, test labs analysis infrastructure management and sustainment, and test tools management and integration.</p> <p>-Complete planning and successful associated operation execution of Glory Trips 210, 211, 212, and 213, leveraging existing Air Force Minuteman III testing for BMDS risk reduction.</p> <p>-Begin detailed test planning for GTI-06 (BMDS Integrated Ground Test).</p> <p>-Complete planning and successful execution of FTG-06b System Pre-Mission Test in support of risk reduction for FTG-06b.</p> <p>-Begin detailed planning of FTG-09 System Pre-Mission Test in support of risk reduction for FTG-09</p> <p>-Complete hardware and software testing, truth drivers and framework integration, formal execution runs and official data collection of Fast Phoenix, GTI-04e Part 2 (BMDS Integrated Ground Test), Fast Falcon, Fast Osprey and Fast Exchange Distributed.</p> <p>-Coordinate emerging ground test requirements for ground test event design and execution</p> <p>-Complete re-plan of ground test campaigns to incorporate PBR/PB15 decisions.</p> <p>-Complete process improvement activities.</p> <p>There are no planned System Post-Flight Reconstruction (SPFR) events in FY 2014 and the pre- and post-test events are addressed in the FY 2015 Base Plans.</p> <p><i>FY 2015 Plans:</i></p> <p>-Continue efforts as listed under FY 2014 plans.</p> <p>-Requirements increased due to approved Integrated Master Test Plan (IMTP) changes .</p> <p>-Facilitate strategic planning of ground test campaigns in support of IMTP.</p> <p>-Complete hardware and software testing, truth drivers and framework integration, formal execution runs and official data collection in support of GTI-06 Part 1, GTD-04e Part 2, GTD-06 Part 1, and any rapid response test events (e.g., 2nd PACOM deployment).</p> <p>-Support execution of the Ballistic Missile Defense System (BMDS) Ground Test campaign to assess BMDS capabilities, to include the integration of additional BMDS sensors.</p> <p>-Provide test infrastructure engineering and technical analysis support during the planning, assessment, and execution of Ground Tests, Pre-Mission Hardware in the Loop Tests, and element wargames and exercises for the Ballistic Missile Defense System (BMDS) Test Program.</p> <p>-Maintain and resource a Ground Test System Mission Manager (SMM) manpower pool to lead Integrated Event Test Teams (IETTs) IAW BMDS Test CONOPs.</p>			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> -Provide SMMs to lead Integrated Event Test Teams IAW BMDS Test CONOPS. -Develop training requirements for ground test SMMs. -Ensure capabilities are tested within respective test venues. -Execute BMDS Ground Test events (including Pre-and Post-test events). -Provide input to MDA modeling and simulation development. -Implement asset management for BMDS Ground Tests. 				
<p>Title: Test Resources</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: Procured, maintained, and managed test resource infrastructure and provided trained Test Resource Managers to integrate test resources into each test event for the BMDS Test Program.</p> <ul style="list-style-type: none"> -Supported all MDA-sponsored BMDS flight and ground testing conducted in FY 2013 with the full complement of ranges and test infrastructure assets. -Developed, maintained, and upgraded as needed Missile Defense Agency (MDA) unique range facilities and mobile sensors, communication, data processing and dissemination infrastructure to support a broad spectrum of test requirements including metric tracking, target characterization, and multi-spectral imagery of BMDS phenomena. -Test Resource Managers (TRMs) continued to complement test execution teams by overseeing scheduling, funding, and management of test resource assets. -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. -Airborne Sensor (ABS) completed development of the High Altitude Observatory (HALO)-IV. HALO-IV supported the Ballistic Missile Defense System (BMDS) Operational Test FTO-01. -Completed development, testing, and certification of the Pacific Collector Range Safety System (PCRSS). PCRSS supported the Operational Test FTO-01 as a mandatory range safety asset. - Substantially improved the facilities and communications infrastructure at Wake Island and Reagan Test Site (RTS) to support deployment requirements for the Operational Test FTO-01. -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. -Maintained and upgraded 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>Articles:</p> <p>112.495</p> <p>-</p>	<p>136.237</p> <p>-</p>	<p>135.577</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014		
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>-Added hardware and digital element representations to support expansion of the existing HWIL capability as the BMDS evolves. -Continued sustainment and development of the Kinetic HWIL facility to support next generation scene development efforts.</p> <p>FY 2014 Plans:</p> <p>-Continue efforts as listed under FY 2013 plans. -Establish and maintain Agency test policies and test functional area organizational accountability, contracts, and budgets. -Defer upgrades to the flight test instrumentation. -Defer development of hardware-in-the-loop (HWIL) equipment. -Defer required maintenance of airborne sensor platforms. -Assume Operations & Maintenance (O&M) funding for War games, Exercises and Training Local Area Networks (WETLANS). -Begin required infrastructure upgrades for FTO-02.</p> <p>FY 2015 Plans:</p> <p>-Continue efforts as listed under FY 2014 plans. -Initiate study for migration of Airborne Sensors airframes to newer platforms. -Defer upgrades to the flight test instrumentation. -Defer development of hardware-in-the-loop (HWIL) equipment. -Defer required maintenance of airborne sensor platforms.</p>				
<p>Title: Engineering and Test Analysis</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments:</p> <p>-Performed system-level analysis and interoperability analysis on Ballistic Missile Defense System (BMDS) test events listed in the Integrated Master Test Plan (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 BMDS test events listed in the IMTP. -Incorporated software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability. -Continued to populate 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 supported data gathering for BMDS hardware/software reliability improvements.</p>		47.076	29.517	28.032
		Articles:	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Allocated and tracked Critical Engagement Condition (CEC) and Empirical Measurement Events (EME) data requirements for ground and flight tests in accordance with the IMTP.</p> <p>-Defined test objectives and evaluation criteria for all System level test events.</p> <p>-Designed and certified scenarios for ground test events to meet required data collection and satisfy SE&I, Operational Test Agencies (OTA) and Warfighter objectives.</p> <p>-Produced threat data required to enable BMDS ground tests, flight tests, and performance assessments.</p> <p>-Used models and simulations (M&S) for pre-test assessments, post-test reviews, and M&S updates.</p> <p>FY 2014 Plans:</p> <p>-Define test objectives and evaluation criteria for all System level test events.</p> <p>-Provide engineering support for test events listed in the Integrated Master Test Plan (IMTP):</p> <ul style="list-style-type: none"> -- 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. <p>-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.</p> <p>-Design and certify scenarios for ground test events to meet required data collection.</p> <p>-Incorporate software changes to Modular Analysis and Reporting Suite (MARS) to enhance analyst efficiency and capability.</p> <p>-Continue to populate the MARS Analysis Database with most current test data to support analysis and capability assessments.</p> <p>-Requirement decrease is a result of approved Integrated Master Test Plan (IMTP) changes.</p> <p>FY 2015 Plans:</p> <p>Provide engineering support for planning, execution, and analysis of the test events listed in the Integrated Master Test Plan (IMTP):</p> <ul style="list-style-type: none"> - Design test architecture, defines target requirements, and generate appropriate scenarios for ground and flight tests. - Define test objectives and assessment criteria for all System level test events to anchor Modeling and Simulation (M&S) and address data collection requirements. - Perform System-level and interoperability analysis. - Participate in major test reviews. - Generate BMDS test observations and coordinate associated BMDS Discrepancy Reports (BDR) within the Failure Reporting, Analysis, and Corrective Action System (FRACAS). - Produce the threat data required to enable BMDS ground tests, flight tests and performance assessment. 			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Utilize models and simulations (M&S) for pre-test assessment and post-test review, as well as M&S updates. - Provide Systems Engineering and Integration (SE&I) test configuration management; risk assessment; and anomaly/deficiency review, assessment and closure to support data gathering for BMDS hardware/software reliability improvements. - Analyze test results to identify shortfalls so that objectives can be reassigned to future events to provide required verification and model validation data. - Develop and document long-range BMDS IMTP planning and integration strategies related to overarching BMDS analysis product integration - Develop and provide capability upgrades to test analysis tools in concert with the BMDS evolution (e.g., Modular Analysis and Reporting Suite (MARS), Assessment Parameter Extraction (APEX) to enhance analysis capability and efficiency. - Populate the MARS database with data from the most recently completed tests to support as-built analysis and capability assessments. - Provide engineering analysis process software to include System Coordination and Observation Reporting Environment (SCORE), Software Change Analysis Review Environment (SCARE), File Manager (FileMan), ManPower Loading (MPL) - Develop and provide infrastructure, software, and associated MDA/IA compliance for the Rapid Scenario Prototype (RASP) capability - Develop and optimize candidate ground test scenarios and produce the associated scenario data packages - Develop and establish hardware-in-the-loop (HWIL) M&S integration test cases for ground and flight tests (pre-post mission). - Provide modeling and technical analysis support during Combatant Command (COCOM) wargames and exercises. - Develop, deliver, and present the Quick Look Brief (QLB), Executive Quick Look Brief (EQLB), Mission Data Review (MDR), and Executive MDR (EMDR). - Develop and establish Hardware-in-the-loop (HWIL) M&S Integration Test Cases for flight and ground tests. - Conduct M&S HWIL Integration Bench Mark testing for ground tests by integrating the BMDS HWIL M&S framework with MDA and non-MDA Elements into the test event BMDS architecture. - Integrate, test, functionally qualify, and deliver end-to-end BMDS simulations supporting ground test missions. 			
Accomplishments/Planned Programs Subtotals	417.738	318.907	366.186

C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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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, respective headquarter regulations are used to conform the acquisition strategy.

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.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Planning and Operations - IMTP Planning and Data Management Tools	C/FP	None : AL	13.697	11.790		32.912	Oct 2013	28.252		-		28.252	Continuing	Continuing	Continuing
Program Planning and Operations - Lab Analysis Infrastructure	MIPR	None : AL/CA	13.353	20.755		4.926	Oct 2013	4.926		-		4.926	Continuing	Continuing	Continuing
Program Planning and Operations - Operational Test Agency	MIPR	None : MD	15.130	14.418		12.562	Oct 2013	12.876		-		12.876	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Flight Testing	C/CPAF	Northrop Grumman/ Lockheed Martin : AL/CO	0.000	-		17.576		17.576		-		17.576	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MT04 / BMDS Test Program							
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Planning and Operations - Support to Ground Testing	C/CPAF	MDIOC/JRDC/ Northrop Grumman : AL/CO/VA/DC	0.000	-		4.889		5.189		-		5.189	Continuing	Continuing	Continuing
Program Planning and Operations - Support to Test Resources	MIPR	None : MiDAESS/AL	0.000	-		11.121		9.404		-		9.404	Continuing	Continuing	Continuing
Program Planning and Operations - Test Functional Management Office	Various	None : MDA/ MiDAESS/AL/VA/ CO/MA	74.757	87.814		37.243	Oct 2013	45.245		-		45.245	Continuing	Continuing	Continuing
Flight Test - IMTP Flight Testing	MIPR	Air & Missile Defense Command/Air Force Ground Supp Center/H'ville Operations Support Center/NAWC/NRL/ Ronald Reagan Test Site /SPAWAR/ Vandenberg AFB/ White Sands Missile Range/AMRDEC/ NSWC/PMRF : AL/ CA/CO/HI	92.555	53.595		22.122	Oct 2013	73.853	Oct 2014	-		73.853	Continuing	Continuing	Continuing
Flight Test - Support to Flight Testing	C/CPAF	None : AL	23.852	23.690		-		-		-		-	Continuing	Continuing	Continuing
Flight Test - Target ILS	MIPR	National Security Agency/Navy Special Warfare Command/ Pacific Missile Range Facility/RTC/Sandia National Laboratory/ Yuma Proving Ground : AL/CA/HI/ NM	0.000	32.200		-		-		-		-	Continuing	Continuing	Continuing
Ground Test - IMTP Ground Testing	MIPR	Aviation & Missile Research &	10.153	9.455		9.802	Oct 2013	5.256	Oct 2014	-		5.256	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603914C / Ballistic Missile Defense Test				MT04 / BMDS Test Program							
Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
		Development/LTPO/Space & Naval Warfare Command : AL/CO/CA													
Ground Test - Support to Ground Testing	C/CPAF	None : AL/CO	13.848	4.450		-		-		-		-	Continuing	Continuing	Continuing
Test Resources - Airborne Optics Mobile Assets	C/DIQ	None : L3/JHU/APL/TX/MD/AZ/TN	21.249	19.638		15.026	Oct 2013	15.026		-		15.026	Continuing	Continuing	Continuing
Test Resources - Core Ground Test Communication Support	MIPR	Space & Missile Defense Command/Space and Naval Warfare Command : AL/CA	3.770	5.256		3.619	Oct 2013	3.127		-		3.127	-	15.772	-
Test Resources - Core Ground Test Labs and HWILS	C/DIQ	None : Colsa/SMDC/SPAWAR/AMRDEC/AL/MD/FL/CA/OH/CO	37.147	21.434		28.168	Oct 2013	27.965		-		27.965	Continuing	Continuing	Continuing
Test Resources - Current String	MIPR	None : SPAWAR/AMRDEC/AL/CA/NM/TN	6.500	-		-		-		-		-	-	6.500	-
Test Resources - Enhanced GT Capability Assets	MIPR	SPAWAR/AMRDEC/AL/CA/NM/TN : Colsa/Boeing/NG/AL/CO/FL/MD/HI	0.000	3.243		6.280	Oct 2013	7.353		-		7.353	Continuing	Continuing	Continuing
Test Resources - Facilities Sustainment, Restoration & Modernization	MIPR	None : AL	0.000	-		3.798	Oct 2013	3.836		-		3.836	Continuing	Continuing	Continuing
Test Resources - Flight Test Improvements	MIPR	None : NAWC/MARAD/WSMR/CA/NCR/NM/MD	8.380	1.288		-		-		-		-	-	9.668	-
Test Resources - Flight Test Instrumentation	C/DIQ	None : Gray Research/NRL/NAWC/CA/MD/NCR/NM/AL/MA	21.791	14.789		17.254	Oct 2013	18.125		-		18.125	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Test Resources - Flight Test Ranges	MIPR	None : NAWC/WSMR/AK/AL/CA/HI/NM/CO	16.123	16.316		8.548	Oct 2013	12.287		-		12.287	Continuing	Continuing	Continuing
Test Resources - Sea Based Mobile Assets	MIPR	None : MARAD/NAWC/Hanscom AFB/SMDC/AL/CA/MD/NCR/NM/MA	13.562	19.663		11.255	Oct 2013	11.536		-		11.536	Continuing	Continuing	Continuing
Test Resources - Second String	MIPR	None : Colsa/Boeing/NG/AL/CO	9.400	-		-		-		-		-	-	9.400	-
Test Resources - Support to Test Resources	MIPR	None : MIDAESS/AL	11.250	10.868		36.789	Oct 2013	30.722		-		30.722	Continuing	Continuing	Continuing
Test Resources - Target ILS	MIPR	None : NSA/NAVSPECWARCOM/PMRF/RTC/SNL/YPG AL/CA/HI/NM	0.000	-		5.500	Oct 2013	5.600	Oct 2014	-		5.600	Continuing	Continuing	Continuing
Engineering and Test Analysis - CSS Support	C/CPFF	Torch Technologies : AL	0.000	-		6.311		6.120		-		6.120	Continuing	Continuing	Continuing
Engineering and Test Analysis - EADSIM	MIPR	None : SMDC/AL	11.528	0.132		-		-		-		-	Continuing	Continuing	Continuing
Engineering and Test Analysis - FFRDC/UARC	MIPR	MITRE : VA	0.000	2.214		0.973		1.596	Oct 2014	-		1.596	Continuing	Continuing	Continuing
Engineering and Test Analysis - Industry Support	C/CPAF	Boeing : AL	0.000	10.438		4.100		4.019	Oct 2014	-		4.019	Continuing	Continuing	Continuing
Engineering and Test Analysis - Joint Analysis Team IMTP	MIPR	None : AL/VA	17.384	19.475		5.846		-		-		-	Continuing	Continuing	Continuing
Engineering and Test Analysis - OGA Support	MIPR	AMRDEC : AL	0.000	13.830		11.587		16.297	Oct 2014	-		16.297	Continuing	Continuing	Continuing
Engineering and Test Analysis - Threat Engineering	MIPR	FFRDC : NJ/CO/MD/VA	1.235	0.987		0.700		-		-		-	Continuing	Continuing	Continuing
Subtotal			436.664	417.738		318.907		366.186		-		366.186	-	-	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
In FY 2014 and FY 2015, Flight Support, Ground Support and Test Resources Support accomplishments are captured under Program Planning and Operations.

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	436.664	417.738	318.907	366.186	-	366.186	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTI-01 (FTO-01 Risk Reduction Flight Test)	▲																											
GT-206 (Sensors Flight Test)	▲																											
FTP-07 (Patriot Intercept Flight Test)	▲																											
GTI-04e Part 1 (BMDS Ground Test)	▲																											
Fast Eagle Increment 2 (BMDS Ground Test)			▲																									
Fast Assurance (BMDS Ground Test)			▲																									
FTM-20 (Aegis Simulated Intercept Flight Test)			▲																									
GM CTV-01 (GM Flight Test)			▲																									
FTM-19 (Aegis Simulated Flight Test)			▲																									
GT-207 (Sensors Flight Test)			▲																									
FTP-08 (PATRIOT Intercept Flight Test)			▲																									
GT-208-1 (Sensors Flight Test)			▲																									
GT-209 (Sensors Flight Test)			▲																									
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)			▲																									
FTM-21 E2 (Aegis Simulated Intercept Flight Test)			▲																									
FTG-07 (GM Intercept Flight Test)			▲																									
Fast Aim (BMDS Ground Test)			▲																									
FTM-21 E1 (Aegis Simulated Intercept Flight Test)			▲																									
GTI-04e Part 1a (BMDS Ground Test)			▲																									
Fast Phoenix (BMDS Ground Test)							✦																					
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)							▲																					
SCD PTV-01 (AEGIS SCD Intercept Only Flight Test)							▲																					

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Warfighter TP 04e (BMDS Ground Test)					✦																							
Israeli Cooperative Intercept Flight Test - FY 2014					✦	✦	✦	✦																				
GTD-04e Part 2 (BMDS Ground Test)					✦	✦	✦	✦	✦	✦																		
FTG-06b (GM Intercept Flight Test)								▲																				
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)					▲																							
GTI-04e (Part 2 (BMDS Ground Test)					✦	✦																						
GDEx 06 Part 1 (BMDS Ground Test)					✦																							
AA CTV-01 (AEGIS AA Intercept Only Flight Test)					△																							
Fast Osprey (BMDS Ground Test)								✦																				
Fast Falcon (BMDS Ground Test)								✦																				
FTM-26 (AEGIS 5.0 Intercept Flight Test)								△																				
FTM-25 (AEGIS 5.0 Intercept Flight Test)								✦																				
FTX-20 (AEGIS 5.0 Target Only Flight Test)								△																				
Israeli Cooperative Intercept Flight Test - FY 2015								✦	✦	✦	✦																	
FTP-09 (8-3) (LTPO Intercept Flight Test)								△																				
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)								△																				
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)								△																				
GTI-06 Part 1 (BMDS Ground Test)								✦	✦																			
GDEx 06 Part 2 (BMDS Ground Test)								✦																				
FTP-10 (8-4) (LTPO Intercept Flight Test)								△																				
FTG-09 (GM Intercept Flight Test)								△																				
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)								△																				
FTO-02 E1 (OTA Intercept Flight Test)								△																				

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
FTX-21 (AEGIS SBT Target Only Flight Test)												△																
GTI-06 Part 2 (BMDS Ground Test)												✦																
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)												△																
FTO-02 E2 (OTA Intercept Flight Test)												△																
FTT-18 (TH Intercept Flight Test)												△																
FTP-11 (8-OT2) LTPO Intercept Flight Test)												△																
FTP-12 (8-OT3) LTPO Intercept Flight Test)												△																
FTP-13 (8-OT4) LTPO Intercept Flight Test)												△																
GTD-06 Part 1a (BMDS Ground Test)												✦																
GTD-06 Part 3 (BMDS Ground Test)												✦																
Warfighter TP 06 (BMDS Ground Test)												✦																
Israeli Cooperative Intercept Flight Test - FY 2016																												
FTM-27 (AEGIS SBT Intercept Flight Test)																												
GTD-06 Part 2 (BMDS Ground Test)																												
GTD-06 Part 1b (BMDS Ground Test)																												
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)																												
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)																												
FTG-15 (GM Intercept Flight Test)																												
GDEx 07a (BMDS Ground Test)																												
GTX-07a (BMDS Ground Test)																												
FTX-24 (AEGIS SBT Target Only Flight Test)																												
SFTM-02 (AEGIS 5.1 Intercept Flight Test)																												
GTI-07a (BMDS Ground Test)																												
Israeli Cooperative Intercept Flight Test - FY 2017																												

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
FTT-15 (TH Intercept Flight Test)																													
FTX-22 (SN Target Only Flight Test)																													
Warfighter TP 07a (BMDS Ground Test)																													
GTD-07a Part 2 (BMDS Ground Test)																													
GDEx 07b (BMDS Ground Test)																													
FTG-13 (OTA Intercept Flight Test)																													
GTD-07a Part 1 (BMDS Ground Test)																													
FTM-28 (AEGIS SBT Intercept Flight Test)																													
FTM-31 (AEGIS SBT Intercept Flight Test)																													
GM CTV-03 (GM Intercept Only Flight Test)																													
FTM-29 (AEGIS 5.0 Intercept Flight Test)																													
GTX-07b (BMDS Ground Test)																													
Israeli Cooperative Intercept Flight Test - FY 2018																													
GDEx 07b Part 2 (BMDS Ground Test)																													
FTO-03 E2 (OTA Intercept Flight Test)																													
FTM-32 (AEGIS SBT Intercept Flight Test)																													
FTM-33 (AEGIS SBT Intercept Flight Test)																													
PA-07b (BMDS Ground Test)																													
GTI-07b (BMDS Ground Test)																													
GTD-07b Part 2 (BMDS Ground Test)																													
FTG-11 (GM Intercept Flight Test)																													
FTO-03 E3 (OTA Intercept Flight Test)																													
Warfighter TP 07b (BMDS Ground Test)																													
GTD-07b Part 1 (BMDS Ground Test)																													
GDEx 08 Part 1 (BMDS Ground Test)																													
GTX-08 Part 1 (BMDS Ground Test)																													

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
FTI-01 (FTO-01 Risk Reduction Flight Test)	1	2013	1	2013
GT-206 (Sensors Flight Test)	1	2013	1	2013
FTP-07 (Patriot Intercept Flight Test)	1	2013	1	2013
GTI-04e Part 1 (BMDS Ground Test)	1	2013	1	2013
Fast Eagle Increment 2 (BMDS Ground Test)	2	2013	2	2013
Fast Assurance (BMDS Ground Test)	2	2013	2	2013
FTM-20 (Aegis Simulated Intercept Flight Test)	2	2013	2	2013
GM CTV-01 (GM Flight Test)	2	2013	2	2013
FTM-19 (Aegis Simulated Flight Test)	3	2013	3	2013
GT-207 (Sensors Flight Test)	3	2013	3	2013
FTP-08 (PATRIOT Intercept Flight Test)	3	2013	3	2013
GT-208-1 (Sensors Flight Test)	4	2013	4	2013
GT-209 (Sensors Flight Test)	4	2013	4	2013
FTO-01 (Aegis/THAAD/Patriot Multiple Engagement Flight Test)	4	2013	4	2013
FTM-21 E2 (Aegis Simulated Intercept Flight Test)	4	2013	4	2013
FTG-07 (GM Intercept Flight Test)	4	2013	4	2013
Fast Aim (BMDS Ground Test)	4	2013	4	2013
FTM-21 E1 (Aegis Simulated Intercept Flight Test)	4	2013	4	2013
GTI-04e Part 1a (BMDS Ground Test)	4	2013	4	2013
Fast Phoenix (BMDS Ground Test)	1	2014	1	2014
FTM-22 (IOT&E) (AEGIS 4.0.2 Intercept Flight Test)	1	2014	1	2014
SCD PTV-01 (AEGIS SCD Intercept Only Flight Test)	1	2014	1	2014

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
Warfighter TP 04e (BMDS Ground Test)	1	2014	1	2014
Israeli Cooperative Intercept Flight Test - FY 2014	1	2014	4	2014
GTD-04e Part 2 (BMDS Ground Test)	1	2014	2	2015
FTG-06b (GM Intercept Flight Test)	4	2014	4	2014
FTX-18 (AEGIS 4.0.2 Target Only Flight Test)	2	2014	2	2014
GTI-04e (Part 2 (BMDS Ground Test)	2	2014	3	2014
GDEx 06 Part 1 (BMDS Ground Test)	3	2014	3	2014
AA CTV-01 (AEGIS AA Intercept Only Flight Test)	3	2014	3	2014
Fast Osprey (BMDS Ground Test)	4	2014	4	2014
Fast Falcon (BMDS Ground Test)	4	2014	4	2014
FTM-26 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015
FTM-25 (AEGIS 5.0 Intercept Flight Test)	1	2015	1	2015
FTX-20 (AEGIS 5.0 Target Only Flight Test)	1	2015	1	2015
Israeli Cooperative Intercept Flight Test - FY 2015	1	2015	4	2015
FTP-09 (8-3) (LTPO Intercept Flight Test)	2	2015	2	2015
FTX-19 (AEGIS 4.0.2 Target Only Flight Test)	2	2015	2	2015
SCD CTV-01 (AEGIS SCD Intercept Only Flight Test)	2	2015	2	2015
GTI-06 Part 1 (BMDS Ground Test)	2	2015	3	2015
GDEx 06 Part 2 (BMDS Ground Test)	3	2015	3	2015
FTP-10 (8-4) (LTPO Intercept Flight Test)	3	2015	3	2015
FTG-09 (GM Intercept Flight Test)	3	2015	3	2015
FTM-24 (AEGIS 4.0.2 Intercept Flight Test)	3	2015	3	2015
FTO-02 E1 (OTA Intercept Flight Test)	3	2015	3	2015
FTX-21 (AEGIS SBT Target Only Flight Test)	4	2015	4	2015
GTI-06 Part 2 (BMDS Ground Test)	4	2015	4	2015

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
SCD CTV-02 (AEGIS SCD Intercept Only Flight Test)	4	2015	4	2015
FTO-02 E2 (OTA Intercept Flight Test)	4	2015	4	2015
FTT-18 (TH Intercept Flight Test)	4	2015	4	2015
FTP-11 (8-OT2) LTPO Intercept Flight Test)	1	2016	1	2016
FTP-12 (8-OT3) LTPO Intercept Flight Test)	1	2016	1	2016
FTP-13 (8-OT4) LTPO Intercept Flight Test)	1	2016	1	2016
GTD-06 Part 1a (BMDS Ground Test)	1	2016	1	2016
GTD-06 Part 3 (BMDS Ground Test)	1	2016	1	2016
Warfighter TP 06 (BMDS Ground Test)	1	2016	1	2016
Israeli Cooperative Intercept Flight Test - FY 2016	1	2016	4	2016
FTM-27 (AEGIS SBT Intercept Flight Test)	2	2016	2	2016
GTD-06 Part 2 (BMDS Ground Test)	2	2016	3	2016
GTD-06 Part 1b (BMDS Ground Test)	3	2016	3	2016
SFTM-01 E1 (AEGIS 5.1 Target Only Flight Test)	3	2016	3	2016
SFTM-01 E2 (AEGIS 5.1 Intercept Only Flight Test)	3	2016	3	2016
FTG-15 (GM Intercept Flight Test)	3	2016	3	2016
GDEx 07a (BMDS Ground Test)	4	2016	4	2016
GTX-07a (BMDS Ground Test)	4	2016	4	2016
FTX-24 (AEGIS SBT Target Only Flight Test)	1	2017	1	2017
SFTM-02 (AEGIS 5.1 Intercept Flight Test)	1	2017	1	2017
GTI-07a (BMDS Ground Test)	1	2017	1	2017
Israeli Cooperative Intercept Flight Test - FY 2017	1	2017	4	2017
FTT-15 (TH Intercept Flight Test)	2	2017	2	2017
FTX-22 (SN Target Only Flight Test)	3	2017	3	2017
Warfighter TP 07a (BMDS Ground Test)	3	2017	3	2017

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
GTD-07a Part 2 (BMDS Ground Test)	3	2017	3	2017
GDEx 07b (BMDS Ground Test)	3	2017	3	2017
FTG-13 (OTA Intercept Flight Test)	3	2017	3	2017
GTD-07a Part 1 (BMDS Ground Test)	3	2017	3	2017
FTM-28 (AEGIS SBT Intercept Flight Test)	3	2017	3	2017
FTM-31 (AEGIS SBT Intercept Flight Test)	1	2018	1	2018
GM CTV-03 (GM Intercept Only Flight Test)	1	2018	1	2018
FTM-29 (AEGIS 5.0 Intercept Flight Test)	1	2018	1	2018
GTX-07b (BMDS Ground Test)	1	2018	1	2018
Israeli Cooperative Intercept Flight Test - FY 2018	1	2018	4	2018
GDEx 07b Part 2 (BMDS Ground Test)	3	2018	3	2018
FTO-03 E2 (OTA Intercept Flight Test)	3	2018	3	2018
FTM-32 (AEGIS SBT Intercept Flight Test)	3	2018	3	2018
FTM-33 (AEGIS SBT Intercept Flight Test)	3	2018	3	2018
PA-07b (BMDS Ground Test)	3	2018	4	2018
GTI-07b (BMDS Ground Test)	3	2018	4	2018
GTD-07b Part 2 (BMDS Ground Test)	4	2018	4	2018
FTG-11 (GM Intercept Flight Test)	4	2018	4	2018
FTO-03 E3 (OTA Intercept Flight Test)	4	2018	4	2018
Warfighter TP 07b (BMDS Ground Test)	1	2019	2	2019
GTD-07b Part 1 (BMDS Ground Test)	1	2019	2	2019
GDEx 08 Part 1 (BMDS Ground Test)	3	2019	3	2019
GTX-08 Part 1 (BMDS Ground Test)	3	2019	3	2019
FTG-17 (GM Intercept Flight Test)	3	2019	3	2019
FTM-35 (AEGIS 5.0 Intercept Flight Test)	4	2019	4	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MT04 / <i>BMDS Test Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
FTT-19 (TH Intercept Flight Test)	4	2019	4	2019
GTX-08 Part 2 (BMDS Ground Test)	4	2019	4	2019
FTX-23 (AEGIS 5.0 Target Only Flight Test)	4	2019	4	2019
GTI-08 (BMDS Ground Test)	2	2020	3	2020
FTM-34 (AEGIS 5.0 Intercept Flight Test)	3	2020	3	2020
FTO-03 E1 (Strat) (OTA Intercept Flight Test)	3	2020	3	2020
FTX-26 (LRDR/CLEAR) (SN Target Only Flight Test)	3	2020	3	2020
GDEx 08 Part 2 (BMDS Ground Test)	3	2020	3	2020
GTD-08 Part 1 (BMDS Ground Test)	4	2020	4	2020
FTT-16 (TH Intercept Flight Test)	4	2020	4	2020
FTM-30 (AEGIS 5.0 Intercept Flight Test)	4	2020	4	2020

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MC04 / <i>Cyber Operations</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC04: <i>Cyber Operations</i>	-	-	0.500	0.514	-	0.514	0.523	0.532	0.546	0.560	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
<p>Title: Network / System Certification and Accreditation (C&A)</p> <p style="text-align: right;">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: N/A</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Fund Ballistic Missile Defense Test Program Information Assurance Manager (IAM) civilian salaries. - 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. 	<p>-</p> <p>-</p>	<p>0.500</p> <p>-</p>	<p>0.514</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MC04 / <i>Cyber Operations</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Develop DT DIACAP certification and accreditation packages. <p><i>FY 2015 Plans:</i></p> <ul style="list-style-type: none"> - Fund Ballistic Missile Defense Test Program Information Assurance Manager (IAM) civilian salaries. - Conduct cyber security/information assurance engineering and architecture planning for DT information technology systems. - Plan and test the Information Assurance controls for Ballistic Missile Defense System. - Develop DT DIACAP certification and accreditation packages. 			
Accomplishments/Planned Programs Subtotals	-	0.500	0.514

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MC04 / <i>Cyber Operations</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - Information Assurance	C/IDIQ	Torch Technologies : Various	0.000	-		0.342	Nov 2013	0.346				0.346	Continuing	Continuing	Continuing
Network / System Certification and Accreditation (C&A) - Information Assurance Civ	MIPR	MDA : Various	0.000	-		0.158	Oct 2013	0.168				0.168	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.500		0.514				0.514	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.500	0.514	-	0.514	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	7.161	20.376	18.586	19.782	-	19.782	17.363	20.015	24.043	25.155	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Program Wide Support	20.376	18.586	19.782
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	20.376	18.586	19.782

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603914C / <i>Ballistic Missile Defense Test</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations Management	Allot	Various : Multi: AL, CA, CO, VA	0.000	0.100		0.306	Jun 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	7.161	20.276		16.900	Dec 2013	16.743	Dec 2014	-		16.743	Continuing	Continuing	Continuing
Program Wide Support - Facilities and Maintenance - SRM	MIPR	Various : Multi: AK,AL,CA,VA	0.000	-		1.380	Jan 2014	3.039	Jan 2015	-		3.039	Continuing	Continuing	Continuing
Subtotal			7.161	20.376		18.586		19.782		-		19.782	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	7.161	20.376	18.586	19.782	-	19.782	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	497.550	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing
MT05: <i>BMDS Targets Program</i>	497.550	418.578	464.626	460.455	-	460.455	398.164	484.390	401.560	403.275	Continuing	Continuing
MD40: <i>Program Wide Support</i>	-	19.945	26.544	24.839	-	24.839	21.373	27.708	24.525	26.547	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

A. Mission Description and Budget Item Justification

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 to BMDS testing. 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. 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 1000Km 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 threats. 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	435.747	495.257	516.092	-	516.092
Current President's Budget	438.523	491.170	485.294	-	485.294
Total Adjustments	2.776	-4.087	-30.798	-	-30.798
• Congressional General Reductions	-0.575	-0.262			
• Congressional Directed Reductions	-	-3.825			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	37.030	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-33.679	-	-30.798	-	-30.798

Change Summary Explanation

Decrease of \$30.798 in FY 2015 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT05: <i>BMDS Targets Program</i>	497.550	418.578	464.626	460.455	-	460.455	398.164	484.390	401.560	403.275	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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. 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 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. The BMDS Targets Program develops and builds targets and countermeasures at multiple locations including: Courtland, AL; Orlando, FL; Huntsville, AL; and Chandler, AZ. 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; and Courtland, AL.

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 2013	FY 2014	FY 2015
Title: Target Hardware	309.365	348.731	351.772
Articles:	-	-	-
Description: Target Hardware includes the development and manufacturing of target hardware. The BMDS Targets Program delivers fully assembled and integrated targets to the BMDS Test Program.			

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

	FY 2013	FY 2014	FY 2015
<p>Target development includes the non-recurring engineering (NRE) for all four target classes, Multi-Class Components (Associated Objects and Modified Ballistic Re-Entry Vehicles), and launch support equipment 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>FY 2013 Accomplishments: Short Range Ballistic Missiles (SRBM):</p> <ul style="list-style-type: none"> -Aegis Readiness Assessment Vehicle-C (ARAV-C) - delivered Ship Set 4 to inventory -Foreign Materiel Acquisition-1 (FMA-1) - completed qualification testing and delivered Ship Set 15 to support pre-ship readiness review in FY 2013 -Short Range Air-Launched Target (SRALT) - initiated manufacturing of Ship Set 5 to support pre-ship readiness review in FY 2015 <p>Medium Range Ballistic Missile (MRBM):</p> <ul style="list-style-type: none"> -Extended Medium Range Ballistic Missile (eMRBM) - completed qualification testing and delivered Ship Set 2 to support pre-ship readiness review in FY 2013; continued manufacturing of Ship Set 1 to inventory -MRBM Type 3 (MRBM T3) - continued manufacturing of Ship Sets 1-3 to support pre-ship readiness reviews in FY 2014 (Ship Set 1) and FY 2015 (Ship Sets 2 and 3) -MRBM T1/T2 - initiated non-recurring engineering development with plan for first Ship Set delivery in FY 2017 -Extended Long Range Air-Launched Target (E-LRALT) - continued non-recurring engineering efforts <p>Intermediate Range Ballistic Missile (IRBM):</p> <ul style="list-style-type: none"> -Launch Vehicle-2 (LV-2) - completed qualification testing and delivered Ship Sets 4 and 5 to support pre-ship readiness reviews in FY 2013 (Ship Set 4) and FY 2014 (Ship Set 5) 			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-IRBM T1/T2 - continued non-recurring engineering efforts; continued manufacturing Ship Sets 1-6 to support pre-ship readiness reviews in FY 2015 (Ship Sets 1-3), FY 2016 (Ship Set 4-5), and FY 2018 (Ship Set 6)</p> <p>Intercontinental Ballistic Missile (ICBM):</p> <p>-ICBM T1/T2 - continued acquisition of long-lead items and manufacturing of Ship Sets 1 and 2 to support pre-ship readiness reviews in FY 2016 (Ship Set 1) and FY 2018 (Ship Set 2)</p> <p>Multi-Class Components:</p> <p>Modified Ballistic Re-Entry Vehicle-2 (MBRV-2) - delivered Ship Set 2 to support an FY 2014 flight test, continued manufacturing of Ship Set 3 to support an FY 2015 flight test</p> <p>-MBRV-5 - continued non-recurring engineering efforts; initiated manufacturing of Ship Sets 1-3 to support flight tests in FY 2015 (Ship Sets 1 and 2) and FY 2017 (Ship Set 3)</p> <p>-MBRV-7 - continued non-recurring engineering efforts; delivered Ship Sets 1 and 2 to support flight tests in FY 2013 (Ship Set 1) and FY 2015 (Ship Set 2); continued manufacturing of Ship Sets 3-5 to support flight tests in FY 2016 (Ship Set 3) and FY 2017 (Ship Sets 4 and 5)</p> <p>-MBRV-8 - continued non-recurring engineering efforts; continued manufacturing of Ship Sets 1 and 2 to support flight tests in FY 2015 (Ship Set 1) and FY 2016 (Ship Set 2)</p> <p>-Continued Associated Object (AO) package development in accordance with IMTP requirements</p> <p>-Continued Counter Measures/Associated Objects Non-Recurring Engineering to include the United Kingdom Project Agreement</p> <p>FY 2014 Plans:</p> <p>Short Range Ballistic Missiles (SRBM):</p> <p>-Aegis Readiness Assessment Vehicle-B (ARAV-B) - deliver Ship Sets 9 and 14 to support pre-ship readiness reviews in FY 2015</p> <p>-ARAV-A - deliver Ship Sets 10, 11, 12, and 13 to support a flight test in the second quarter FY 2014</p> <p>-Short Range Air-Launched Target (SRALT) - continue manufacturing of Ship Set 5 to support pre-ship readiness review in FY 2015</p> <p>-Develop and manufacture additional SRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Medium Range Ballistic Missile (MRBM):</p>			

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

	FY 2013	FY 2014	FY 2015
<p>-Extended Medium Range Ballistic Missile (eMRBM) - begin assembly, integration and test of Ship Set 1 to support flight test in FY 2015</p> <p>-MRBM Type 3 (MRBM T3) - complete qualification testing and deliver Ship Set 1 to support first Flight Test in FY 2015, continue manufacturing of Ship Set 2 and 3 to support pre-ship readiness reviews in FY 2015, initiate production of Ship Set 4 to support pre-ship readiness review in FY 2016</p> <p>-MRBM T1/T2 - continue non-recurring engineering efforts; initiate production of Ship Set 1 to support pre-ship readiness reviews in FY 2017</p> <p>-Develop and manufacture additional MRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Intermediate Range Ballistic Missile (IRBM):</p> <p>-IRBM T1/T2 - continue non-recurring engineering development; complete qualification testing and deliver Ship Sets 1-3 to support pre-ship readiness reviews in FY 2015, continue manufacturing of Ship Sets 4 and 5 to support pre-ship readiness reviews in FY 2017; continue manufacturing of Ship Set 6 to support pre-ship readiness review in FY 2018</p> <p>-Develop and manufacture additional IRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Intercontinental Ballistic Missile (ICBM):</p> <p>-ICBM T1/T2 - complete Critical Design Review and continue non-recurring engineering; continue manufacturing of Ship Sets 1 and 2 to support pre-ship readiness reviews in FY 2016 (Ship Set 1) and FY 2017 (Ship Set 2)</p> <p>-Begin integration of the ICBM Ground Test Missile used as a pathfinder for the Concept of Operations</p> <p>-Develop and manufacture additional ICBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Multi-Class Components:</p> <p>-Modified Ballistic Re-Entry Vehicle-2 (MBRV-2) - deliver Ship Set 3 to support an FY 2015 flight test</p> <p>-MBRV-5 - continue non-recurring engineering efforts; deliver Ship Set 1 to support a flight test in FY 2015; continue manufacturing of Ship Sets 2-4 to support flight tests in FY 2015 (Ship Sets 2-3) and FY 2016 (Ship Set 4)</p> <p>-MBRV-7 - deliver Ship Sets 3-5 to support flight tests in FY 2015, FY 2017, and FY 2018; initiate development of Ship Sets 6-8 to support flight tests in FY 2018, FY 2019, and FY 2020</p> <p>-MBRV-8 - continue non-recurring engineering efforts; deliver Ship Sets 1 and 2 to support flight tests in FY 2015 (Ship Set 1) and FY 2016 (Ship Set 2)</p> <p>-Continue Associated Object (AO) package production in accordance with IMTP requirements</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Continue Counter Measures/Associated Objects Non-Recurring Engineering to support flight tests as required by the BMDS Integrated Master Test Plan</p> <p>-Develop and manufacture additional Modified Ballistic Re-entry Vehicles, Associated Objects, and Motors as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Variance Analysis: Increases due to non-recurring engineering and long-lead hardware purchases associated with Medium Range Ballistic Missile Type 3 (MRBM T3) targets and Intercontinental Ballistic Missiles (ICBM) targets.</p> <p>FY 2015 Plans: Short Range Ballistic Missiles (SRBM):</p> <p>-Aegis Readiness Assessment Vehicle-TTO-E (ARAV-TTO-E) - initiate production of Ship Sets 3 and 4 to support pre-ship readiness reviews in FY 2016</p> <p>-ARAV-B - deliver Ship Sets 11, 12, 13, and 16 to support a flight test in the second quarter FY 2015, initiate production of Ship Sets 19 and 20 so support pre-ship readiness reviews in FY 2017</p> <p>-Short Range Air-Launched Target (SRALT) - complete qualification testing deliver Ship Set 5 to support pre-ship readiness review in FY 2015</p> <p>-Develop and manufacture additional SRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Medium Range Ballistic Missile (MRBM):</p> <p>-MRBM Type 3 (MRBM T3) - complete qualification testing and deliver Ship Sets 2, 3, and 4 to support pre-ship readiness reviews in FY 2015 (Ship Sets 2 and 3) and FY 2016 (Ship Set 4); award contract for Ship Sets 5 and 6 to initiate long lead procurement</p> <p>-MRBM T1/T2 - continue non-recurring engineering efforts; continue manufacturing of Ship Set 1 to support pre-ship readiness reviews in FY 2017, initiate development of Ship Sets 2 and 3 to support pre-ship readiness reviews in FY 2018</p> <p>-Develop and manufacture additional MRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p> <p>Intermediate Range Ballistic Missile (IRBM):</p> <p>-IRBM T1/T2 - continue non-recurring engineering development; complete qualification testing and deliver Ship Sets 4-8 to support pre-ship readiness reviews in FY 2017 (Ship Set 4 and 5) and FY 2018 (Ship Sets 6, 7, and 8); initiate production of Ship Set 9 to support pre-ship readiness review in FY 2019</p> <p>-Develop and manufacture additional IRBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
<p>Intercontinental Ballistic Missile (ICBM):</p> <ul style="list-style-type: none"> -ICBM T1/T2 - continue non-recurring engineering efforts; complete qualification testing and deliver Ship Set 1 to support pre-ship readiness review in FY 2016; continue manufacturing of Ship Sets 2, 3, and 4 to support pre-ship readiness reviews in FY 2017 (Ship Set 2), FY 2018 (Ship Set 3), and FY 2020 (Ship Set 4); initiate production of Ship Set 5 to include acquisition of long-lead items to support pre-ship readiness review in FY 2022 -Continue integration of the ICBM Ground Test Missile used as a pathfinder for the Concept of Operations -Develop and manufacture additional ICBMs as required by semi-annual updates to the BMDS Integrated Master Test Plan <p>Multi-Class Components:</p> <ul style="list-style-type: none"> -Modified Ballistic Re-Entry Vehicle-2 (MBRV-2) - deliver next Ship Set to support an FY 2016 flight test -MBRV-5 - deliver Ship Sets 2-4 to support flight tests in FY 2015 (Ship Sets 2-3) and FY 2016 (Ship Set 4) -MBRV-7 - deliver Ship Sets 6-9 to support flight tests in FY 2018, FY 2019, and FY 2020 -MBRV-8 - initiate Ship Set 3 to support an FY 2017 flight test -Continue Associated Object (AO) package development in accordance with IMTP requirements -Continue Counter Measures/Associated Objects Non-Recurring Engineering to support flight tests as required by the BMDS Integrated Master Test Plan -Develop and manufacture additional Modified Ballistic Re-entry Vehicles, Associated Objects, and Motors as required by semi-annual updates to the BMDS Integrated Master Test Plan <p>Variance Analysis: Slight increase due to re-establishing the Foreign Materiel Acquisition-1 (FMA-1) target program.</p>				
<p>Title: Program Operations</p> <p align="right">Articles:</p> <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 2013 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 		55.922	55.011	56.201
		-	-	-

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

	FY 2013	FY 2014	FY 2015
<p>-Provided program management, subcontract management, quality assurance, verification of hardware and software development, and technical and testing oversight</p> <p>-Ensured Targets and Countermeasures program compliance with internal and external direction, policies, and regulations</p> <p>-Conducted Internal Program Plans that align with the Missile Defense Agency (MDA) approved Integrated Master Test Plan (IMTP)</p> <p>-Continued a Mission Assurance and Manufacturing Engineering Program to include Quality, Configuration Management, Manufacturing, Engineering, Security, and Safety</p> <p>-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> <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 Program Plans that align with the Missile Defense Agency (MDA) approved Integrated Master Test Plan (IMTP)</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> <p>Variance analysis: Slight decrease over FY 2013 due to reduction in contractor support services.</p> <p>FY 2015 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 Program Plans that align with the Missile Defense Agency (MDA) approved Integrated Master Test Plan (IMTP)</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>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015
Variance analysis: Slight increase over FY 2014 due to the Government assuming responsibility for data products and associated analysis from Prime Contractors.				
Title: Target Support		53.291	60.884	52.482
		Articles:	-	-
Description: BMDS Target Program Support consists of two sub-elements. These are Systems Engineering/Program Management and Logistics. 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. 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, Modified Ballistic 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. FY 2013 Accomplishments: System Engineering and Program Management: -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 can be used to support Target requirements				

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Continued Special Studies and associated analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure targets are representative of feasible future threats and technology is being incorporated into the Targets program</p> <p>-Continued Quality/Mission Assurance to include Pedigree Reviews to ensure high probability of mission success</p> <p>-Continued information technology and classified network support to ensure sensitive target information is not compromised</p> <p>-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</p> <p>-Continued MDA Engineering Directorate targets and countermeasures requirements support to ensure targets accurately represent the threat</p> <p>-Performed 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:</p> <p>-Continued C4 Motors storage, disposal, transportation, aging surveillance, and static fire support in order to sustain Launch Vehicle-2 (LV-2)</p> <p>-Continued 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>-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 Orbus 1A Missile storage and support to sustain Extended Long Range Air-Launched Targets (E-LRALT)</p> <p>-Continued storage and disposal of Castor IVA and Castor IVB motors</p> <p>-Completed modification to expand the missile assembly building at Courtland, Alabama</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 providing classified network connections to Other Government Agencies (OGAs) so their subject matter experts can be used to support Target requirements</p> <p>-Continue analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure they are threat representative and that the Agency is making use of available technology in our future designs</p> <p>-Continue performing 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>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>-Continue Software Independent Verification and Validation (IV&V) to provide risk reduction of flight missions for target systems under development, including the Medium Range Ballistic Missile Type 3 (MRBM T3), Intermediate Range Ballistic Missile (IRBM), Extended Long Range Air-Launched Target (E-LRALT), and Modified Ballistic Re-Entry Vehicle-5 (MBRV-5)</p> <p>-Conduct MBRV7/8 All Up Round test</p> <p>Logistics:</p> <p>-Continue Multi-Class Inventory storage, aging surveillance, maintenance of existing assets, and transportation support to ensure availability of Modified Ballistic Re-entry Vehicles and ground support equipment</p> <p>-Conduct disposal actions of inert assets</p> <p>Variance Analysis: Increases due to FY 2014 only requirements for MBRV-7/8 All Up Round Test and E-LRALT Software IV&V</p> <p>FY 2015 Plans: 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 providing classified network connections to Other Government Agencies (OGAs) so their subject matter experts can be used to support Target requirements</p> <p>-Continue analyses of future target Launch Vehicles, Re-Entry Vehicles, and launch platforms to ensure they are threat representative and that the Agency is making use of available technology in our future designs</p> <p>-Continue performing 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) to provide risk reduction of flight missions for target systems under development, including the Medium Range Ballistic Missile Type 3 (MRBM T3), Intermediate Range Ballistic Missile (IRBM), and Modified Ballistic Re-Entry Vehicle-5 (MBRV-5)</p> <p>Logistics:</p> <p>-Continue Multi-Class Inventory storage, aging surveillance, maintenance of existing assets, and transportation support to ensure availability of Modified Ballistic Re-entry Vehicles and ground support equipment</p> <p>-Conduct disposal actions of inert assets</p>			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
Variance Analysis: Decreases to normal Target Support requirement with no specific additional cost drivers in FY 2015			
Accomplishments/Planned Programs Subtotals	418.578	464.626	460.455

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

N/A

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).

The BMDS Targets and Countermeasures Program Acquisition Strategy is based on three premises. The first is to utilize existing capabilities. The second is to initiate new development if there is no existing capability using firm-fixed price contracts with incentive fee based on cost, schedule and performance. The third premise is to use cost reimbursable contracts with incentive fee based on cost, schedule, and performance for new development that has high-risk.

MDA BMDS Targets Program competitively awarded a prime contract to Lockheed Martin Space Systems Company (LMSSC) for 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 Modified Ballistic Re-Entry Vehicles are procured using this contract. Hardware purchases will remain on existing contract and launch services and engineering services have been broken out into a follow-on contract. The follow-on launch and engineering services contract was awarded via a sole-source fixed price contract.

MDA BMDS Targets Program competitively awarded a prime contract to Orbital Sciences Corporation air-launched Intermediate Range Ballistic Missile (IRBM) targets. This award includes two follow-on options; one for eight IRBM targets (exercised) and one for one to six IRBM targets.

MDA BMDS Targets Program awarded a sole-source contract to L-3 Communications/Coleman Aerospace (Coleman) to provide one air-launched medium range ballistic missile and one air-launched short range ballistic missile.

MDA BMDS Targets Program competitively awarded a prime contract to L-3 Communications/Coleman Aerospace (Coleman) to provide 6 medium range ballistic missile targets. This award includes one follow-on option, for up to six additional medium range ballistic missile targets.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
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<p>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.</p> <p>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.</p> <p>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.</p> <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>E. Performance Metrics N/A</p>		

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Hardware - Target Hardware/ICBM - 1	C/CPAF	Orbital Sciences Corporation : Chandler, AZ	6.347	23.810		58.148	Nov 2013	79.105	Nov 2014	-		79.105	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	11.916	13.965		1.536	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 2	C/CPAF	Orbital Sciences Corporation : Chandler, AZ	94.105	65.753		61.089	Nov 2013	58.718	Nov 2014	-		58.718	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/IRBM - 3	C/CPIF	Lockheed Martin Space Systems Company : Courtland, AL	2.262	-		-		-		-		-	2.262	4.524	2.262
Target Hardware - Target Hardware/IRBM - 4	C/FFP	Orbital Sciences Corporation : Chandler, AZ	0.916	-		-		-		-		-	0.916	1.832	0.916
Target Hardware - Target Hardware/IRBM - 5	C/FFP	Teledyne Solutions, Inc. : Huntsville, AL	0.896	-		-		-		-		-	0.896	1.792	0.896
Target Hardware - Target Hardware/MRBM - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	65.831	138.217		110.208	Nov 2013	67.880	Nov 2014	-		67.880	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/MRBM - 2	C/CPAF	Orbital Sciences Corporation : Chandler, AZ	62.142	-		-		-		-		-	62.142	124.284	62.142
Target Hardware - Target Hardware/MRBM - 3	C/CPAF	L3 Communications/ Coleman Aerospace : Orlando, FL	28.782	12.525		30.704	Nov 2013	59.144	Nov 2014	-		59.144	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/MRBM - 4	C/CPIF	Orbital Sciences Corporation : Chandler, AZ	1.968	-		-		-		-		-	1.968	3.936	1.968

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Target Hardware - Target Hardware/MRBM - 5	C/FFP	Teledyne Solutions, Inc. : Huntsville, AL	0.560	-		-		-		-		-	0.560	1.120	0.560
Target Hardware - Target Hardware/MRBM-6	C/CPAF	MRBM T1/T2 RFP : TBD	0.000	0.500		-		-		-		-	0.500	1.000	0.500
Target Hardware - Target Hardware/Multi-Class Components - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	51.697	38.439		40.807	Nov 2013	25.615	Nov 2014			25.615	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 2	C/CPAF	Lockheed Martin Space Systems Company : United Kingdom	2.780	2.535		8.585	Dec 2013	1.934	Dec 2014			1.934	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 3	C/CPIF	Lockheed Martin Space Systems Company : Courtland, AL	2.786	-		-		-		-		-	2.786	5.572	2.786
Target Hardware - Target Hardware/Multi-Class Components - 4	FFRDC	Massachusetts Institute of Technology, Lincoln Lab : Lexington, MA	0.653	2.214		5.297	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 5	FFRDC	Sandia National Laboratories : Albuquerque, NM	2.559	2.424		1.791	Dec 2013	-		-		-	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/Multi-Class Components - 6	C/CPAF	Multi-Class Components RFP : TBD	0.000	-		-		10.065	Dec 2014			10.065	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	12.631	1.690		6.644	Nov 2013	2.766	Nov 2014			2.766	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 2	C/CPAF	Orbital Sciences Corporation : Chandler, AZ	4.192	-		-		-		-		-	4.192	8.384	4.192

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Hardware - Target Hardware/SRBM - 3	C/CPIF	L3 Communications/ Coleman Aerospace : Orlando, FL	0.000	4.926		12.416	Nov 2013	13.732	Nov 2014	-		13.732	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 4	C/CPIF	Lockheed Martin Space Systems Company : Courtland, AL	3.282	-		-		-		-		-	3.282	6.564	3.282
Target Hardware - Target Hardware/SRBM - 5	C/CPIF	Orbital Sciences Corporation : Chandler, AZ	5.803	-		-		-		-		-	5.803	11.606	5.803
Target Hardware - Target Hardware/SRBM - 6	C/FFP	Orbital Sciences Corporation : Chandler, AZ	1.310	-		-		-		-		-	1.310	2.620	1.310
Target Hardware - Target Hardware/SRBM - 7	MIPR	Naval Surface Warfare Center, Port Hueneme : Port Hueneme, CA	9.016	2.367		11.506	Nov 2013	32.813	Nov 2014	-		32.813	Continuing	Continuing	Continuing
Target Hardware - Target Hardware/SRBM - 8	MIPR	Missile Defense Agency : Huntsville, AL	3.990	-		-		-		-		-	3.990	7.980	3.990
Target Hardware - Target Hardware/SRBM - 9	FFRDC	Sandia National Laboratories : Albuquerque, NM	0.189	-		-		-		-		-	0.189	0.378	0.189
Program Operations - Program Operations - 1	C/CPAF	Targets MiDAESS Support : Huntsville, AL	34.734	32.584		26.874	Nov 2013	27.357	Nov 2014	-		27.357	Continuing	Continuing	Continuing
Program Operations - Program Operations - 10	MIPR	Missile Defense Agency : Huntsville, AL	20.264	19.350		23.361	Nov 2013	23.782	Oct 2014	-		23.782	Continuing	Continuing	Continuing
Program Operations - Program Operations - 11	MIPR	Defense Finance and Accounting Services : Indianapolis, IN	0.000	-		0.289	Nov 2013	0.294	Nov 2014	-		0.294	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603915C / Ballistic Missile Defense Targets				MT05 / BMDS Targets Program							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Operations - Program Operations - 12	C/FFP	Network Management Resources : Annapolis, MD	0.000	0.085		-		-		-		-	Continuing	Continuing	Continuing
Program Operations - Program Operations - 13	MIPR	Naval Surface Warfare Center : Crane, IN	0.000	-		0.284	Nov 2013	0.289	Nov 2014	-		0.289	Continuing	Continuing	Continuing
Program Operations - Program Operations - 2	C/FFP	CACI : Huntsville, AL	0.169	0.263		0.128	Nov 2013	0.130	Nov 2014	-		0.130	Continuing	Continuing	Continuing
Program Operations - Program Operations - 3	C/FFP	Colsa Corporations : Huntsville, AL	1.052	0.283		-		-		-		-	1.335	2.670	1.335
Program Operations - Program Operations - 4	C/FFP	Tecolote Research, Inc. : Huntsville, AL	0.086	0.085		0.064	Nov 2013	0.065	Nov 2014	-		0.065	Continuing	Continuing	Continuing
Program Operations - Program Operations - 5	C/FFP	NMR Consulting : Chantilly, VA	0.000	-		0.188	Nov 2013	0.191	Nov 2014	-		0.191	Continuing	Continuing	Continuing
Program Operations - Program Operations - 6	FFRDC	Johns Hopkins University, Applied Physics Lab : Baltimore, MD	0.316	0.344		0.550	Nov 2013	0.560	Nov 2014	-		0.560	Continuing	Continuing	Continuing
Program Operations - Program Operations - 7	MIPR	US Army Aviation & Missile Command : Huntsville, AL	1.022	1.183		1.060	Nov 2013	1.080	Nov 2014	-		1.080	Continuing	Continuing	Continuing
Program Operations - Program Operations - 8	MIPR	Aviation & Missile Research, Dev & Eng Center : Huntsville, AL	0.674	1.247		1.172	Nov 2013	1.393	Nov 2014	-		1.393	Continuing	Continuing	Continuing
Program Operations - Program Operations - 9	MIPR	US Air Force Space & Missile Systems Center (SMC) : Albuquerque, NM	0.702	0.498		1.041	Nov 2013	1.060	Nov 2014	-		1.060	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 30	MIPR	Vandenberg Air Force Base : Vandenberg, CA	0.000	-		0.048	Nov 2013	-		-		-	0.048	0.096	0.048

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Target Support - Target Support/Logistics - 32	MIPR	Eglin Air Force Base : Eglin AFB, FL	0.000	-		0.036	Nov 2013	-		-		-	0.036	0.072	0.036
Target Support - Target Support/Logistics - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	5.138	6.143		8.314	Nov 2013	6.885	Nov 2014	-		6.885	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 11	MIPR	Naval Surface Warfare Center : Crane, IN	0.067	1.880		1.601	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 12	MIPR	Redstone Arsenal Garrison : Huntsville, AL	1.424	1.350		0.368	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 13	MIPR	Redstone Technical Test Center : Huntsville, AL	0.502	-		-		-		-		-	0.502	1.004	0.502
Target Support - Target Support/Logistics - 14	MIPR	US Army Joint Munitions Command : Hawthorne Army Depot, NV	0.047	0.008		0.009	Nov 2013	0.009	Nov 2014	-		0.009	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 15	MIPR	US Naval Weapons Station : Earl, NJ	0.035	-		-		-		-		-	0.035	0.070	0.035
Target Support - Target Support/Logistics - 16	MIPR	US Property & Fiscal Office for Arizona : Phoenix, AZ	0.929	1.606		2.129	Nov 2013	1.118	Nov 2014	-		1.118	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 17	MIPR	US Army White Sands Missile Range : White Sands, NM	0.132	-		0.406	Nov 2013	0.175	Nov 2014	-		0.175	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 18	MIPR	Defense Finance & Accounting Service : Indianapolis, IN	0.284	0.376		1.066	Nov 2013	0.287	Nov 2014	-		0.287	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Target Support - Target Support/Logistics - 19	C/FFP	Northrop Grumman Space Systems : Albuquerque, NM	0.620	-		-		-		-		-	0.620	1.240	0.620
Target Support - Target Support/Logistics - 2	C/CPFF	Alliant Techsystems, Inc. (ATK) : Magna, UT	0.790	-		-		-		-		-	0.790	1.580	0.790
Target Support - Target Support/Logistics - 20	C/FFP	Wyle Laboratories : Huntsville, AL	0.000	0.123		0.421		-		-		-	0.544	1.088	0.544
Target Support - Target Support/Logistics - 21	MIPR	US Air Force Space & Missile Systems Center (SMC) : Albuquerque, NM	0.000	2.330		0.567	Nov 2013	1.301	Nov 2014	-		1.301	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 22	MIPR	Redstone Test Center : Huntsville, AL	0.000	0.642		0.126	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 23	C/FFP	Venturi Aerospace : Huntsville, AL	0.000	0.076		0.113	Nov 2013	-		-		-	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 24	C/FFP	TASC, Inc. : Albuquerque, NM	0.000	3.248		2.352	Nov 2013	1.731	Nov 2014	-		1.731	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 25	MIPR	Tooele Army Depot : Tooele, UT	0.000	0.610		0.512	Nov 2013	0.521	Nov 2014	-		0.521	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 26	MIPR	US Army Yuma Proving Ground : Yuma, AZ	0.000	-		0.415	Nov 2013	0.061	Nov 2014	-		0.061	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 27	MIPR	Naval Surface Warfare Center : Dahlgren, VA	0.000	-		0.020	Nov 2013	0.041	Nov 2014	-		0.041	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 28	MIPR	Reagan Test Site : Kwajalein Atoll, Marshall Islands	0.000	-		0.133	Nov 2013	0.052	Nov 2014	-		0.052	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 29	MIPR	Pacific Missile Range Facility : Kekaha, HI	0.000	-		0.306	Nov 2013	0.052	Nov 2014	-		0.052	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Support - Target Support/Logistics - 3	C/FFP	Aerojet Corporation : Albuquerque, NM	0.342	-		-		-		-		-	0.342	0.684	0.342
Target Support - Target Support/Logistics - 31	MIPR	US Army Garrison - Natick : Natick, MA	0.000	-		0.048	Nov 2013	-		-		-	0.048	0.096	0.048
Target Support - Target Support/Logistics - 33	MIPR	Air Force Research Laboratory : Wright Patterson AFB, OH	0.000	-		0.185	Nov 2013	-		-		-	0.185	0.370	0.185
Target Support - Target Support/Logistics - 4	C/FFP	Alliant Techsystems, Inc. (ATK) : Magna, UT	1.350	1.180		2.641	Nov 2013	3.367	Nov 2014	-		3.367	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 5	MIPR	Aviation & Missile Research, Dev & Eng Center : Huntsville, AL	0.113	2.331		3.590	Nov 2013	3.587	Nov 2014	-		3.587	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 6	MIPR	Hill Air Force Base : Ogden, UT	0.836	1.497		1.494	Nov 2013	1.322	Nov 2014	-		1.322	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 7	MIPR	Missile Defense Agency : Huntsville, AL	0.000	5.985		-		-		-		-	5.985	11.970	5.985
Target Support - Target Support/Logistics - 8	MIPR	Naval Air Warfare Center, China Lake : China Lake, CA	1.400	0.075		0.589	Nov 2013	0.599	Nov 2014	-		0.599	Continuing	Continuing	Continuing
Target Support - Target Support/Logistics - 9	MIPR	New Mexico State University Physical Sciences Lab : Las Cruces, NM	0.162	-		-		-		-		-	0.162	0.324	0.162
Target Support - Target Support/Systems Engineering - 1	C/CPAF	Lockheed Martin Space Systems Company : Courtland, AL	26.163	11.589		17.560	Nov 2013	17.876	Nov 2014	-		17.876	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 10	FFRDC	Sandia National Laboratories : Albuquerque, NM	0.227	1.402		1.711	Dec 2013	1.742	Dec 2014	-		1.742	Continuing	Continuing	Continuing

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2015 Missile Defense Agency												Date: March 2014			
Appropriation/Budget Activity				R-1 Program Element (Number/Name)				Project (Number/Name)							
0400 / 4				PE 0603915C / Ballistic Missile Defense Targets				MT05 / BMDS Targets Program							
Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Target Support - Target Support/Systems Engineering - 12	MIPR	Defense Finance & Accounting Service : Indianapolis, IN	0.382	-		-		-		-		-	0.382	0.764	0.382
Target Support - Target Support/Systems Engineering - 13	C/CPAF	Orbital Sciences Corporation : Chandler, AZ	0.000	-		0.283	Nov 2013	0.288	Nov 2014	-		0.288	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 14	MIPR	Naval Air Warfare Center : Point Mugu, CA	0.000	0.162		0.610	Nov 2013	0.052	Nov 2014	-		0.052	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 2	FFRDC	Aerospace Corporation : El Segundo, CA	4.535	0.999		3.243	Nov 2013	3.715	Nov 2014	-		3.715	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 3	C/FFP	Northrop Grumman Space Systems : Albuquerque, NM	4.651	0.192		-		-		-		-	4.843	9.686	4.843
Target Support - Target Support/Systems Engineering - 4	C/FFP	Teledyne Solutions, Inc. : Huntsville, AL	0.016	-		-		-		-		-	0.016	0.032	0.016
Target Support - Target Support/Systems Engineering - 5	C/FFP	Wyle Laboratories : Huntsville, AL	0.941	0.382		-		-		-		-	1.323	2.646	1.323
Target Support - Target Support/Systems Engineering - 6	FFRDC	Johns Hopkins University, Applied Physics Lab : Baltimore, MD	0.522	0.313		0.333	Nov 2013	0.339	Nov 2014	-		0.339	Continuing	Continuing	Continuing
Target Support - Target Support/Systems Engineering - 7	MIPR	US Air Force Space & Missile Systems Center (SMC) : Albuquerque, NM	0.904	-		-		-		-		-	0.904	1.808	0.904
Target Support - Target Support/Systems Engineering - 8	MIPR	Aviation & Missile Research, Dev & Eng Center : Huntsville, AL	8.484	8.792		9.655	Nov 2013	7.362	Nov 2014	-		7.362	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Target Support - Target Support/Systems Engineering - 9	C/CPAF	L3 Communications/ Coleman Aerospace : Orlando, FL	0.922	-		-		-		-		-	0.922	1.844	0.922
Subtotal			497.550	418.578		464.626		460.455		-		460.455	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	497.550	418.578	464.626	460.455	-	460.455	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)	▲																											
MRBM Type 3 Critical Design Review		▲																										
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 18)		▲																										
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 10)			▲																									
LV-2 Pre-Ship Readiness Review (Ship Set 4)			▲																									
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 13)			▲																									
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 15)				▲																								
eMRBM Pre-Ship Readiness Review (Ship Set 2)				▲																								
eMRBM Pre-Ship Readiness Review (Ship Set 1)					▲																							
LV-2 Pre-Ship Readiness Review (Ship Set 5)					▲																							
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 13)					▲																							
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 10)					▲																							
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 11)					▲																							
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 12)					▲																							
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)							△																					
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 9)								△																				

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)											△																	
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 11)											△																	
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 12)											△																	
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 13)											△																	
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 14)											△																	
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)													△															
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 3)																												
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 5)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)																												
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)																												
ICBM Booster #1 Pre-Ship Readiness Review																												
ARAV-TTO-E (SRBM) Pre-Ship Readiness Review (Ship Set 4)																												
LV-2 Pre-Ship Readiness Review (Ship Set 6)																												

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
ARAV-TTO-E (SRBM) Pre-Ship Readiness Review (Ship Set 3)														△														
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 17)																				△								
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 19)																				△								
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 1)																				△								
ICBM Booster #2 Pre-Ship Readiness Review																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)																												
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 20)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)																												
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 2)																												
ICBM Booster #3 Pre-Ship Readiness Review																												
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 3)																												
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)																												

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
ARAV-C (SRBM) Pre-Ship Readiness Review (Ship Set 4)	1	2013	1	2013
MRBM Type 3 Critical Design Review	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 10)	3	2013	3	2013
LV-2 Pre-Ship Readiness Review (Ship Set 4)	3	2013	3	2013
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 13)	3	2013	3	2013
FMA-1 (SRBM) Pre-Ship Readiness Review (Ship Set 15)	4	2013	4	2013
eMRBM Pre-Ship Readiness Review (Ship Set 2)	4	2013	4	2013
eMRBM Pre-Ship Readiness Review (Ship Set 1)	1	2014	1	2014
LV-2 Pre-Ship Readiness Review (Ship Set 5)	1	2014	1	2014
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 13)	1	2014	1	2014
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 10)	1	2014	1	2014
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 11)	1	2014	1	2014
ARAV-A (SRBM) Pre-Ship Readiness Review (Ship Set 12)	1	2014	1	2014
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 1)	4	2014	4	2014
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 9)	1	2015	1	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 16)	1	2015	1	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 11)	1	2015	1	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 12)	1	2015	1	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 13)	1	2015	1	2015
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 14)	1	2015	1	2015
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 2)	2	2015	2	2015

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDs Targets Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 1)	2	2015	2	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 2)	2	2015	2	2015
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 3)	3	2015	3	2015
SRALT (SRBM) Pre-Ship Readiness Review (Ship Set 5)	3	2015	3	2015
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 3)	3	2015	3	2015
MRBM Type 3 Pre-Ship Readiness Review (Ship Set 4)	1	2016	1	2016
ICBM Booster #1 Pre-Ship Readiness Review	2	2016	2	2016
ARAV-TTO-E (SRBM) Pre-Ship Readiness Review (Ship Set 4)	3	2016	3	2016
LV-2 Pre-Ship Readiness Review (Ship Set 6)	3	2016	3	2016
ARAV-TTO-E (SRBM) Pre-Ship Readiness Review (Ship Set 3)	3	2016	3	2016
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 17)	1	2017	1	2017
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 19)	1	2017	1	2017
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 1)	1	2017	1	2017
ICBM Booster #2 Pre-Ship Readiness Review	2	2017	2	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 4)	2	2017	2	2017
ARAV-B (SRBM) Pre-Ship Readiness Review (Ship Set 20)	3	2017	3	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 5)	4	2017	4	2017
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 7)	2	2018	2	2018
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 6)	2	2018	2	2018
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 8)	3	2018	3	2018
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 2)	3	2018	3	2018
ICBM Booster #3 Pre-Ship Readiness Review	3	2018	3	2018
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 3)	3	2018	3	2018
IRBM Type 1/Type 2 Pre-Ship Readiness Review (Ship Set 9)	2	2019	2	2019
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 4)	3	2019	3	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MT05 / <i>BMDS Targets Program</i>
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Events	Start		End	
	Quarter	Year	Quarter	Year
MRBM T1/T2 Pre-Ship Readiness Review (Ship Set 6)	3	2019	3	2019

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
--------------------------------------------------	----------------------------------------------------------------------------------------------------	--------------------------------------------------------------------

COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program Wide Support</i>	-	19.945	26.544	24.839	-	24.839	21.373	27.708	24.525	26.547	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
Title: Program Wide Support	19.945	26.544	24.839
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	19.945	26.544	24.839

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>

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

Remarks

D. Acquisition Strategy
N/A

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0603915C / <i>Ballistic Missile Defense Targets</i>	Project (Number/Name) MD40 / <i>Program Wide Support</i>
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance (MIPR)	MIPR	Various Multi : AL, CO, CA, VA etc.	0.000	-		24.000	Jan 2014	22.620	Jan 2015	-		22.620	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance (Reqn)	Reqn	Various Multi : AL, CO, CA, VA etc.	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Infrastructure Support (MIPR)	MIPR	Various; Multi : AL, VA	0.000	10.224		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Infrastructure Support (FFP)	C/FFP	Northrop Grumman; Multi : AL, VA	0.000	9.460		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various; Multi : AL, CA, CO, VA	0.000	0.261		0.495	Jun 2014	1.519	Jun 2015	-		1.519	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support, International, and Materiel and Readiness	MIPR	Various Multi: : AK, AL, CA, CO, HI, VA	0.000	-		0.623	Nov 2013	0.700	Nov 2014	-		0.700	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations, Sustainment and GPC	Allot	Various, Multi : AL, CO, CA, VA etc	0.000	-		1.426	Dec 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			0.000	19.945		26.544		24.839		-		24.839	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	19.945	26.544	24.839	-	24.839	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	810.075	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing
MD68: <i>AEGIS Ashore</i>	801.070	229.966	117.072	94.999	-	94.999	29.524	24.687	21.343	16.553	Continuing	Continuing
MC68: <i>Cyber Operations</i>	-	-	0.242	-	-	-	-	-	-	-	-	0.242
MT68: <i>Aegis Ashore Test</i>	-	0.650	5.130	21.300	-	21.300	1.200	-	-	-	Continuing	Continuing
MD40: <i>Program-Wide Support</i>	9.005	13.260	6.930	7.145	-	7.145	1.917	1.650	1.546	1.272	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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 has been completed, 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 transportable surveillance radar (AN/TPY-2) 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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>
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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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	276.338	129.374	124.547	-	124.547
Current President's Budget	243.876	129.374	123.444	-	123.444
Total Adjustments	-32.462	-	-1.103	-	-1.103
• Congressional General Reductions	-0.364	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-5.850	-			
• SBIR/STTR Transfer	-3.218	-			
• Other Adjustment	-23.030	-	-1.103	-	-1.103

Change Summary Explanation

Decrease of \$1.103 in FY 2015 reflects realignment of Department of Defense priorities.

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD68 / AEGIS Ashore			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD68: AEGIS Ashore	801.070	229.966	117.072	94.999	-	94.999	29.524	24.687	21.343	16.553	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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) and will be modernized in pace with Navy's destroyer modernization plan. . The initial AAMDSC will be deployed to Romania in 2015 and will employ Advanced Capability Build 12 (ACB 12)/Aegis BMD 5.0 CU (Capabilities Upgrade) and SM-3 Block IB. A second AAMDSC will be deployed to Poland in FY 2018 in accordance with the EPAA. 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 has been 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 were funded by research, development, test and evaluation (RDT&E) under the authority of 10 USC 2353. The PMRF equipment testing was completed in the New Jersey (NJ) Deckhouse, the PMRF equipment was shipped to PMRF, where it has been installed and integrated into an identical deckhouse located at the PMRF. The Aegis Ashore Deckhouse at NJ will be subsequently used for Romania.

Research and Development efforts will include required modifications to adapt the Aegis Weapon System for land based use and modernization in pace with Navy's destroyer modernization plan.

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 2013	FY 2014	FY 2015
Title: Aegis Weapon System Development	210.026	80.590	77.763
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments:			
- Completed Construction of Romania Deckhouse in New Jersey			
- Completed Integration and test of PMRF Weapon System in New Jersey			
- Completed installation of Deckhouse, Deckhouse Support Building, and Launcher at PMRF			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
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<ul style="list-style-type: none"> - Delivered equipment to Pacific Missile Range Facility (PMRF) - Delivered Weapon System and equipment skids to PMRF - Conducted Aegis Light-Off of completely integrated system - Began Integration and Test in PMRF - Delivered Romania 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>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Complete installation of Deckhouse in Romania - Complete integration and test of Aegis Ashore Weapons System in Romania - Complete installation of Launchers in Romania - Prepare Aegis Ashore system for Navy acceptance - Complete construction of Aegis Ashore Missile Defense System Complex at Romania 			
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Title: Global Deployment Operations	4.853	5.982	-
Articles:	-	-	-

Description: See Description below.

FY 2013 Accomplishments:

- Provided operations support to include civilian salaries, contractor support services, and travel for Global Deployment (GD) manpower directly supporting Aegis Ashore deployments.

FY 2014 Plans:

- 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).

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD68 / <i>AEGIS Ashore</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014		FY 2015
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<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> <p>FY 2015 Plans:</p> <p>- Transfer all Global Deployment program office requirements to Program Wide Support as captured in Budget Project MD40.</p>				
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<p>Title: Site Activation</p>	15.087	30.500		17.236
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<p>Description: See Description below.</p>	Articles:	-		-
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<p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> - Completed Site Activation for Aegis Ashore site at PMRF. - Began Site Activation for Aegis Ashore site in Romania. - Completed Romania Aegis Ashore Missile Defense Facility Design - Installed temporary facilities to support on-site personnel and construction activity, initiated base operating support services, established administrative communications capabilities, and awarded contract to provide commercial power to the site. <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Continue site activation for Aegis Ashore site in Romania to include temporary site activation facilities, base operating support, administrative communications, and on-site material handling equipment and services - Design, purchase, and install an integrated electronic security system for Romania Aegis Ashore site security. - Support transportation of equipment to Romania. - Initiate phase 1 of a commercial power extension project to provide commercial power to the Romania Aegis Ashore site. - Conduct initial engineering studies for Aegis Ashore site in Poland (Geotechnical engineering and Unexploded Ordnance (UXO) contracts 1st Qtr FY14). - Initiate contract development efforts for Poland base operating support and temporary facilities <p>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.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - Continue site activation for Aegis Ashore site in Romania to include temporary site activation facility maintenance, base operating support, utilities, administrative communications, and on-site material handling equipment and services - Initiate phase 2 of a commercial power extension project to provide commercial power to the Romania Aegis Ashore site. 				
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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD68 / <i>AEGIS Ashore</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<ul style="list-style-type: none"> - Continue engineering studies for Aegis Ashore site in Poland - Initiate site activation for Aegis Ashore site in Poland to include temporary site activation facilities, base operating support, utilities, administrative communications, and on-site material handling equipment and services - Complete Poland Aegis Ashore Missile Defense Facility Design - Support transportation of equipment to Romania 			
Accomplishments/Planned Programs Subtotals	229.966	117.072	94.999

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	1,232.233

Remarks

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 Military Construction (MILCON) contract for the installation of the Aegis Ashore Missile Defense Site Complex in Romania. An additional Research, Development, Test and Evaluation (RDT&E) funded contract line item was added to the MILCON contract for the disassembly of the deckhouse in New Jersey and the re-assembly of the deckhouse in Romania. This was a competitive award issued through US Army Corps of Engineers, European District (CENAU).

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD68 / <i>AEGIS Ashore</i>
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Competition is the intended Acquisition Strategy for Aegis Ashore Poland.
The Global Deployment (GD) program office is utilizing Naval Facilities Engineering Command (NAVFAC) and CENAU to award and administer contracts for base operating support, commercial power, temporary site activation facilities, and integrated electronic security systems at Romania and Poland.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Weapon System Development - AWS Deckhouse design and engineering - MD68	MIPR	Huntsville, AL : NAVFAC	26.709	-		-		-		-		-	-	26.709	36.748
Aegis Weapon System Development - AWS Design, SEPM, Integration , Test and Certification - MD68 - 20117143581603	MIPR	NSWC Dahlgren : Dahlgren, VA	27.317	10.689		5.256	Oct 2013	10.500	Oct 2014	-		10.500	Continuing	Continuing	Continuing
Aegis Weapon System Development - AWS Development and Hardware - MD68	Various	Lockheed Martin : Moorestown, NJ, NAVSEA, and BAE	624.207	135.493		48.196	Nov 2013	42.500	Oct 2014	-		42.500	Continuing	Continuing	Continuing
Aegis Weapon System Development - C4I (SW, T&E, Spares, SEPM, ILS) - MD68	MIPR	SPAWAR : San Diego, CA	6.100	19.852		12.361	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Aegis Weapon System Development - Deckhouse - MD68	MIPR	NAVFAC : HI	25.500	21.487		-		-		-		-	-	46.987	-
Aegis Weapon System Development - Deckhouse - MD68 - 2012725224459	MIPR	CENAU : -	0.000	0.429		6.731	Oct 2013	15.500	Oct 2014	-		15.500	Continuing	Continuing	Continuing
Aegis Weapon System Development - Design, SEPM, ILS, Test Integration - MD68 - 20117143581602	MIPR	NSWC PHD : Port Hueneme, CA	8.208	5.045		4.130	Oct 2013	8.400	Oct 2014	-		8.400	Continuing	Continuing	Continuing
Aegis Weapon System Development - PMRF - MD68	MIPR	PMRF : Hawaii	0.000	2.403		-		-		-		-	Continuing	Continuing	Continuing
Aegis Weapon System Development - Technical Design Agent- MD68 - 20117143581595	MIPR	JHU/APL : Columbia, MD	11.391	2.079		2.025	Oct 2013	0.863	Oct 2014	-		0.863	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Aegis Weapon System Development - VLS Design and Hardware - MD68	MIPR	NAVSEA-LM/BAE : Baltimore and Minneapolis	16.692	12.549		1.891	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Global Deployment Operations - MD68	MIPR	Various : Various	33.412	4.853		5.982	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Site Activation - MD68	MIPR	Various : Various	21.534	3.075		30.500	Oct 2013	17.236	Oct 2014	-		17.236	Continuing	Continuing	Continuing
Site Activation - AAMDTC Post Construction Award Services	MIPR	NAVFAC, USACE : AL, HI	0.000	0.479		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - GEO Technical (GEO TECH)	MIPR	CENAU : Poland	0.000	2.562		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - PMRF Site Activation - MD68	MIPR	PMRF : HI	0.000	1.110		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - Romania Admin Communications	MIPR	DISA, Scott AFB, : IL	0.000	0.431		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - Romania Admin Communications - MD68	C/CPFF	Northrop Grumman : Colorado Springs, CO	0.000	0.378		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - Romania Commercial Power Connection - MD68	MIPR	NAVFAC : Naples, Italy	0.000	1.500		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - Romania Integrated Electronic Security System - MD68	MIPR	USACE : Huntsville, AL	0.000	0.800		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - Romania Site Activation - MD68	MIPR	Multiple : Multiple	0.000	3.667		-		-		-		-	Continuing	Continuing	Continuing
Site Activation - UXO Characterization	MIPR	CENAU : Poland	0.000	1.085		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			801.070	229.966		117.072		94.999		-		94.999	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks

N/A

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

Remarks

N/A

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

Remarks

N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	801.070	229.966	117.072	94.999	-	94.999	-	-	-

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.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD68 / AEGIS Ashore
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AA ALO 4 (AAMDSC in Romania)											△																	
AA ALO 2 (AAMDTC in PMRF)							▲																					
AA ALO 1 (Moorestown, NJ)			▲																									
AA ALO 3 (Romania Equipment in NJ)							▲																					

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD68 / <i>AEGIS Ashore</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AA AL0 4 (AAMDSC in Romania)	2	2015	2	2015
AA AL0 2 (AAMDTC in PMRF)	1	2014	1	2014
AA AL0 1 (Moorestown, NJ)	3	2013	3	2013
AA AL0 3 (Romania Equipment in NJ)	1	2014	1	2014

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MC68 / Cyber Operations			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MC68: <i>Cyber Operations</i>	-	-	0.242	-	-	-	-	-	-	-	-	0.242
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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 2013	FY 2014	FY 2015
<p>Title: Network / System Certification and Accreditation (C&A)</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments: See MD68 for FY 2013 plans</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - 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. 	<p>-</p> <p>-</p>	<p>0.242</p> <p>-</p>	<p>-</p> <p>-</p>

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MC68 / Cyber Operations
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- 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. FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	-	0.242	-

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603175C: <i>Ballistic Missile Defense Technology</i>	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603882C: <i>Ballistic Missile Defense Midcourse Defense Segment</i>	923.506	910.852	1,003.768	-	1,003.768	1,131.060	937.998	690.524	628.342	Continuing	Continuing
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603892C: <i>AEGIS BMD</i>	958.506	909.928	929.208	-	929.208	955.825	911.095	866.678	721.426	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603898C: <i>Ballistic Missile Defense Joint Warfighter Support</i>	47.710	42.619	46.387	-	46.387	52.619	53.552	54.699	56.252	Continuing	Continuing
• 0603904C: <i>Missile Defense Integration and Operations Center (MDIOC)</i>	61.684	52.095	58.530	-	58.530	51.738	61.594	53.885	55.414	Continuing	Continuing
• 0901598C: <i>Management HQ - MDA</i>	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing

Remarks

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

Appropriation/Budget Activity	R-1 Program Element (Number/Name)	Project (Number/Name)
0400 / 4	PE 0604880C / Land Based SM-3 (LBSM3)	MC68 / Cyber Operations

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MC68 / Cyber Operations
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Network / System Certification and Accreditation (C&A) - CND/IA Advisory and Assistance Services	C/CPIF	Torch Technologies : AL, VA	0.000	-		0.242		-		-		-	-	0.242	-
Subtotal			0.000	-		0.242		-		-		-	-	0.242	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	0.242	-	-	-	-	0.242	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MT68 / Aegis Ashore Test			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT68: <i>Aegis Ashore Test</i>	-	0.650	5.130	21.300	-	21.300	1.200	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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

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

	FY 2013	FY 2014	FY 2015
Title: Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing	0.650	5.130	21.300
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: -Prepared for and conducted BMDS Flight and Ground Test events as reflected in the IMTP and the Exhibit R-4 schedule.			
FY 2014 Plans: - 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 increase 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.			
FY 2015 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MT68 / <i>Aegis Ashore Test</i>
--------------------------------------------------	------------------------------------------------------------------------------------------	-----------------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- 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	0.650	5.130	21.300

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MT68 / Aegis Ashore Test
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-	-	-	-	-	-	-	-	-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis Ashore Test MT68	C/CPAF	L3 Communications : Waco, TX	0.000	-		0.950	Oct 2013	3.944	Oct 2014	-		3.944	Continuing	Continuing	Continuing
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis Ashore Test MT68 - (DT Assist Event)	MIPR	NAWC/ PM : Pt. Mugu, CA	0.000	-		0.550	Oct 2013	2.284	Oct 2014	-		2.284	Continuing	Continuing	Continuing
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis Ashore Test MT68 - 20111219347329	MIPR	NSWC/ PHD : Pt. Heuneme, CA	0.000	-		0.450	Oct 2013	1.868	Oct 2014	-		1.868	Continuing	Continuing	Continuing
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis	MIPR	JHU/ APL : Laurel, MD	0.000	0.400		-		-		-		-	-	0.400	2.325

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MT68 / Aegis Ashore Test
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Ashore Test MT68 - 201112193488909															
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis Ashore Test MT68 - 201112193501551	MIPR	Aegis BMD : VA, CA, MA, MD	0.000	-		2.150	Oct 2013	8.927	Oct 2014			8.927	Continuing	Continuing	Continuing
Conduct Aegis Ashore Ballistic Missile Defense (BMD) Testing - Aegis Ashore Test MT68 - DT Assist Event	MIPR	PMRF: Barking Sands : Kauai, HI	0.000	0.250		1.030	Oct 2013	4.277	Oct 2014			4.277	Continuing	Continuing	Continuing
Subtotal			0.000	0.650		5.130		21.300				21.300	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.650	5.130	21.300	-	21.300	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MT68 / Aegis Ashore Test
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ✧

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
AA CTV-01 (Aegis Ashore Flight Test)							△																					
FTO-02 E1 (Aegis Ashore Intercept Flight Test)											△																	
FTO-03 E2 (AA/Aegis Multiple Engagement Flight Test)																							△					

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MT68 / <i>Aegis Ashore Test</i>
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
AA CTV-01 (Aegis Ashore Flight Test)	3	2014	3	2014
FTO-02 E1 (Aegis Ashore Intercept Flight Test)	3	2015	3	2015
FTO-03 E2 (AA/Aegis Multiple Engagement Flight Test)	3	2018	3	2018

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)				Project (Number/Name) MD40 / Program-Wide Support			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	9.005	13.260	6.930	7.145	-	7.145	1.917	1.650	1.546	1.272	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

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

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	13.260	6.930	7.145
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: See paragraph A, Mission Description and budget item justification.			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	13.260	6.930	7.145

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / <i>Land Based SM-3 (LBSM3)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604880C / Land Based SM-3 (LBSM3)	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance (MIPR)	MIPR	Various; Multi : AL, CA, CO, VA	0.000	8.870		1.556	May 2014	-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Facilities and Maintenance (Reqn)	Reqn	Various; Multi : AL, CA, CO, VA	0.000	2.810		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various: Multi : AL, CA, CO, VA	0.000	1.580		0.114	Jun 2014	0.275	Jun 2015	-		0.275	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management Agency Operations Management	Allot	Various Multi: : AL, CO, CA, VA	0.000	-		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various : Multi: AL, CA, CO, VA	9.005	-		3.330	Jan 2014	6.147	Jan 2015	-		6.147	9.005	27.487	-
Program Wide Support - Agency Operations and Support, International, and Materiel and Readiness	MIPR	Department of State; : Washington, DC, Japan, Australia	0.000	-		1.107	May 2014	0.723	May 2015	-		0.723	Continuing	Continuing	Continuing
Program Wide Support - FFRDC/UARC	C/CPAF	Various : Multi:AL,VA	0.000	-		0.823	Oct 2013	-		-		-	Continuing	Continuing	Continuing
Subtotal			9.005	13.260		6.930		7.145		-		7.145	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	9.005	13.260	6.930	7.145	-	7.145	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604881C / <i>AEGIS SM-3 Block IIA Co-Development</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	1,087.391	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	2,319.624
MD09: <i>SM-3 Block IIA Co-Development</i>	1,070.908	398.971	289.788	240.751	-	240.751	139.284	50.456	-	-	-	2,190.158
MT09: <i>SM-3 Block IIA Co-Development Test</i>	-	-	2.303	7.680	-	7.680	26.254	12.768	-	-	-	49.005
MD40: <i>Program-Wide Support</i>	16.483	17.752	16.402	15.264	-	15.264	10.333	4.227	-	-	-	80.461

MDAP/MAIS Code: 362

The FY 2015 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. 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.

Proving Missile Defense:

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604881C / <i>AEGIS SM-3 Block IIA Co-Development</i>
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- 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 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	420.630	308.522	230.466	-	230.466
Current President's Budget	416.723	308.493	263.695	-	263.695
Total Adjustments	-3.907	-0.029	33.229	-	33.229
• Congressional General Reductions	-0.622	-0.029			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	50.000	-			
• Reprogrammings	-9.965	-			
• SBIR/STTR Transfer	-5.495	-			
• Other Adjustment	-37.825	-	33.229	-	33.229

Change Summary Explanation

FY 2015 increase of \$33.2M due mainly to the following:

- \$36.0M was received from PE 0603892C MD09 to provide support in order to increase schedule and performance of the Block IIA development.
- Approximately \$3.0M was decreased due to minor cost savings adjustments across the program.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD09: SM-3 Block IIA Co-Development	1,070.908	398.971	289.788	240.751	-	240.751	139.284	50.456	-	-	-	2,190.158
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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.

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.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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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): e.g., 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 2013	FY 2014	FY 2015
<p>Title: SM-3 Block IIA Cooperative Development (SCD)</p> <p style="text-align: right;">Articles:</p> <p>Description: See Description below.</p> <p>FY 2013 Accomplishments: (IAW Project Phase II Jointly approved re-plan)</p> <ul style="list-style-type: none"> -Conducted SM-3 Blk IIA Propulsion Stack & System Critical Design Review (CDR). -Conducted Mk 29 Mod 0 Canister CDR. -Conducted and analyzed results of Restrained Firing Test Event. -Began the procurement process of SM-3 Blk IIA RDT&E Missile Rounds to support Flight Test program. -Demonstrated performance of missile sub-sections. -Conducted test planning and analysis in preparation for the Hazard Assessment Test (HAT) 40 FT Vertical Drop Test and the MK 72 Booster Fast Cook-Off Test in support of CTV-1 SM-3 Blk IIA 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>398.971</p> <p>-</p>	<p>289.788</p> <p>-</p>	<p>240.751</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Vertical Launch System (VLS) Canister:</p> <ul style="list-style-type: none"> - Complete VLS ship integration drawings and VLS technical manuals. - 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> <p><i>FY 2015 Plans:</i></p> <p>SM-3 Blk IIA Missile Development:</p> <ul style="list-style-type: none"> -Demonstrate Real-time Scene Generator Final Capability - Conduct Throttleable Divert Attitude Control System (TDACS) Design Verification Test -Conduct KW Closed Loop System Test -Complete SM-3 IIA AUR Huntsville I&T Process Proofing -Deliver Inert Operational Missile to Combat Systems Engineering Development Site (CSEDS) -Complete TDACS qualification Testing -Deliver Near Miss Shock Testing Hardware -Complete Post Near Miss Shock Performance Testing of Kinetic Warhead (KW) and Guidance Section (GS) -Deliver TDACS IM Fast Cook-off Units -Deliver Throttleable Divert and Attitude Control System (TDACS), Guidance Section (GS), and Kinetic Warhead (KW) Guidance Unit in support of BMDS Flight Test event - Prepare for and conduct BMDS Flight Test events as reflected in the IMTP and the Exhibit R-4 schedule <p>Vertical Launch System (VLS) Canister:</p> <ul style="list-style-type: none"> -Conduct Mk 29 Mod 0 Canister In-Process Review -Prepare for and conduct Insensitive Munitions testing -Prepare for and conduct Packaging, Handling, Storage & Transportation testing -Prepare for and conduct BMDS Flight Test events as reflected in the IMTP and the Exhibit R-4 schedule 			
Accomplishments/Planned Programs Subtotals	398.971	289.788	240.751

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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C. Other Program Funding Summary (\$ in Millions)

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0604881C: <i>AEGIS SM-3 Block IIA Co-Development</i>	416.723	308.493	263.695	-	263.695	175.871	67.451	-	-	-	1,232.233

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.

Competition will be used to purchase any products or services, when appropriate.

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
SM-3 Block IIA Cooperative Development (SCD) - Mission Assurance - MD09	MIPR	NSWC/DD/VA : Dahlgren, VA	0.750	0.408		0.700	Dec 2013	0.499	Dec 2014	-		0.499	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Canister - MD09	MIPR	BAE : MD	32.926	9.914		9.498	Dec 2013	6.768	Dec 2014	-		6.768	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Development - MD09	SS/CPAF	RAYTHEON : AZ	953.990	340.767		250.783	Nov 2013	212.957	Dec 2014	-		212.957	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Development - MD09 - 20117135426611	MIPR	NSWC/DD/VA : VA	18.551	6.507		8.530	Nov 2013	6.078	Dec 2014	-		6.078	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Development - MD09 - 20117135426613	C/CPFF	JHU/APL : MD	44.616	21.166		18.203	Nov 2013	12.971	Nov 2014	-		12.971	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Development - MD09 - 20117135426614	MIPR	MIT/LL : MA	5.403	1.302		0.830	Nov 2013	0.591	Nov 2014	-		0.591	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA Development - MD09 - 20117135426616	MIPR	NSWC/PHD : CA	7.177	0.830		0.553	Nov 2013	0.394	Nov 2014	-		0.394	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 Blk IIA	MIPR	NSWC IH : MD	5.995	0.926		0.691	Nov 2013	0.493	Nov 2014	-		0.493	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Development - MD09 - 20117135426619															
SM-3 Block IIA Cooperative Development (SCD) - SM-3 BIK IIA Development - MD09 - CD	MIPR	NSWC/CD : MD	0.000	1.400		-		-		-		-	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 BIK IIA Development - MD09 - Crane	MIPR	NSWC/Crane : IN	0.000	0.993		-		-		-		-	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 BIK IIA Development - MD09 CL	MIPR	NAWC/CL : CA	0.000	1.827		-		-		-		-	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 BIK IIA Mission Assurance - MD09	MIPR	NSWC/CO : CA	0.000	0.826		-		-		-		-	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - SM-3 BIK IIA Test Risk Reduction - MD09	C/CPFF	TREX : CA	0.000	7.780		-		-		-		-	Continuing	Continuing	Continuing
SM-3 Block IIA Cooperative Development (SCD) - Testing & Evaluation - MD09	MIPR	Various : CA, VA, MD	1.500	4.325		-		-		-		-	-	5.825	13.995
Subtotal			1,070.908	398.971		289.788		240.751		-		240.751	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1,070.908	398.971	289.788	240.751	-	240.751	-	-	-

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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
SM-3 Blk IIA PS Critical Design Review (CDR)		▲																										
SM-3 Blk IIA SYS/KW Critical Design Review (CDR)				▲																								
Restrained Level Firing		◆																										

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD09 / SM-3 Block IIA Co-Development

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development Test
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MT09: SM-3 Block IIA Co-Development Test	-	-	2.303	7.680	-	7.680	26.254	12.768	-	-	-	49.005
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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 warfighter 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 2013	FY 2014	FY 2015
Title: SM-3 Co-Development Testing	-	2.303	7.680
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: -No FY 2013 efforts, funding begins in FY 2014			
FY 2014 Plans: -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.			
FY 2015 Plans:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development Test

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
-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	-	2.303	7.680

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

Line Item	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
• 0603884C: <i>Ballistic Missile Defense Sensors</i>	306.896	366.590	392.893	-	392.893	462.030	448.763	403.272	368.125	Continuing	Continuing
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	Continuing	Continuing
• 0603896C: <i>Ballistic Missile Defense Command and Control, Battle Management & Communication</i>	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603902C: <i>Next Generation Aegis Missile (Standard Missile-3 Block IIB (SM-3 IIB))</i>	58.952	-	-	-	-	-	-	-	-	-	58.952
• 0604880C: <i>Land Based SM-3 (LBSM3)</i>	243.876	129.374	123.444	-	123.444	32.641	26.337	22.889	17.825	Continuing	Continuing

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development Test
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks
N/A

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

Remarks
N/A

Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09	MIPR	NSWC : PHD CA	0.000	-		0.900	Nov 2013	3.001	Nov 2014	-		3.001	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	-		0.400	Nov 2013	1.334	Nov 2014	-		1.334	Continuing	Continuing	Continuing
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09 - 20126284353142	MIPR	JHU : APL MD	0.000	-		0.400	Nov 2013	1.334	Nov 2014	-		1.334	Continuing	Continuing	Continuing

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development Test
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation - MT09 - 20126284353143	MIPR	NAWC : Pt. Mugu CA	0.000	-		0.500	Nov 2013	1.667	Nov 2014	-		1.667	Continuing	Continuing	Continuing
SM-3 Co-Development Testing - SM-3 Blk IIA Development (SCD) Testing & Evaluation-MT09 - 20126284353146	MIPR	NSWC : IH MD	0.000	-		0.103	Nov 2013	0.344	Nov 2014	-		0.344	Continuing	Continuing	Continuing
Subtotal			0.000	-		2.303		7.680		-		7.680	-	-	-

Remarks
N/A

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

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-	2.303	7.680	-	7.680	-	-	-

Remarks
N/A

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development 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 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
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)															◇																	
SFTM-2 (Aegis Intercept Flight Test)																◇																

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MT09 / SM-3 Block IIA Co-Development Test

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
SFTM-2 (Aegis Intercept Flight Test)	1	2017	1	2017

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD40 / Program-Wide Support
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	16.483	17.752	16.402	15.264	-	15.264	10.333	4.227	-	-	-	80.461
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 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. 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

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	17.752	16.402	15.264
Articles:	-	-	-
Description: See Description below.			
FY 2013 Accomplishments: See paragraph A, Mission Description and budget item justification.			
FY 2014 Plans: See paragraph A: Mission Description and Budget Item Justification			
FY 2015 Plans: See paragraph A: Mission Description and Budget Item Justification			
Accomplishments/Planned Programs Subtotals	17.752	16.402	15.264

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD40 / Program-Wide Support

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604881C / AEGIS SM-3 Block IIA Co-Development	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations and Support Services	C/CPFF	Various; Multi : AL, CO, VA	16.483	14.942		15.364	Mar 2014	15.136	Mar 2015	-		15.136	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations management	Allot	Various: Multi : ALless than CAless than COless than VA	0.000	1.027		1.038	Jun 2014	0.128	Jun 2015	-		0.128	Continuing	Continuing	Continuing
Program Wide Support - Facilities and maintenance	MIPR	Various: Multi : AK, AL, CA, VA	0.000	1.783		-		-		-		-	Continuing	Continuing	Continuing
Subtotal			16.483	17.752		16.402		15.264		-		15.264	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	16.483	17.752	16.402	15.264	-	15.264	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	110.727	204.666	-	-	-	-	-	-	-	-	-	315.393
MD10: <i>Precision Tracking Space System (PTSS)</i>	109.228	193.137	-	-	-	-	-	-	-	-	-	302.365
MD40: <i>Program-Wide Support</i>	1.499	11.529	-	-	-	-	-	-	-	-	-	13.028

MDAP/MAIS Code: 362

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

Note

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-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.

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>	
Goals and objectives for the PTSS are: <ul style="list-style-type: none">- 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. <p>The Precision Tracking Space System (PTSS) contributes to defense of the U.S. homeland and regional, missile defense, including large raid protection.</p> <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>		

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	297.375	-	-	-	-
Current President's Budget	204.666	-	-	-	-
Total Adjustments	-92.709	-	-	-	-
• Congressional General Reductions	-0.320	-			
• Congressional Directed Reductions	-55.000	-			
• Congressional Rescissions	-15.000	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.077	-			
• SBIR/STTR Transfer	-2.830	-			
• Other Adjustment	-19.482	-	-	-	-

Change Summary Explanation

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD10 / Precision Tracking Space System (PTSS)
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD10: Precision Tracking Space System (PTSS)	109.228	193.137	-	-	-	-	-	-	-	-	-	302.365
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-	-	

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

Note

N/A

A. Mission Description and Budget Item Justification

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.
- Observes and tracks launches beyond the range of airborne and terrestrial sensors.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>	Project (Number/Name) MD10 / <i>Precision Tracking Space System (PTSS)</i>

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 2013	FY 2014	FY 2015
Title: Precision Tracking Space System	193.137	-	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments:			
- 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			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD10 / Precision Tracking Space System (PTSS)

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- 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)			
FY 2014 Plans: N/A			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	193.137	-	-

C. Other Program Funding Summary (\$ in Millions)											
<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603175C: Ballistic Missile Defense Technology	69.438	9.321	38.800	-	38.800	76.400	52.000	112.800	178.000	-	536.759
• 0603893C: Space Tracking and Surveillance System	45.420	40.347	31.346	-	31.346	33.697	34.542	35.317	36.316	Continuing	Continuing
• 0603896C: Ballistic Missile Defense Command and Control, Battle Management & Communication	344.431	405.319	443.484	-	443.484	456.182	462.525	452.937	465.638	Continuing	Continuing
• 0603914C: Ballistic Missile Defense Test	438.114	337.993	386.482	-	386.482	340.811	369.920	417.712	413.194	Continuing	Continuing
• 0603915C: Ballistic Missile Defense Targets	438.523	491.170	485.294	-	485.294	419.537	512.098	426.085	429.822	Continuing	Continuing

Remarks

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>	Project (Number/Name) MD10 / <i>Precision Tracking Space System (PTSS)</i>

D. Acquisition Strategy
FY 2014 reflects termination of the program.

E. Performance Metrics
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD10 / Precision Tracking Space System (PTSS)
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Precision Tracking Space System - Space and Ground Segment	Various	Various : Various	96.720	176.248		-		-		-		-	-	272.968	359.796
Subtotal			96.720	176.248		-		-		-		-	-	272.968	359.796

Remarks
None.

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

Remarks
None.

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

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD10 / Precision Tracking Space System (PTSS)
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Precision Tracking Space System - Contractor Support Services	C/CPFF	MDA : NCR, HSV, CoS	7.412	6.920		-		-		-		-	-	14.332	20.897
Precision Tracking Space System - FFRDC/UARC	MIPR	Aerospace, SDL, JPL : NCR, HSV, CoS	1.856	3.830		-		-		-		-	-	5.686	3.148
Precision Tracking Space System - MDA Civilians	Allot	MDA : Various	2.137	5.677		-		-		-		-	-	7.814	5.969
Precision Tracking Space System - OGA Civilians	MIPR	NRL : Washington, D.C.	0.720	0.217		-		-		-		-	-	0.937	1.091
Precision Tracking Space System - Travel and Transportation	Allot	MDA : NCR, HSV, CoS	0.383	0.245		-		-		-		-	-	0.628	0.610
Subtotal			12.508	16.889		-		-		-		-	-	29.397	31.715

Remarks
None.

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	109.228	193.137	-	-	-	-	-	302.365	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.

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Exhibit R-4, RDT&E Schedule Profile: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD10 / Precision Tracking Space System (PTSS)

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

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Optical Payload Breadboard Subassemblies Complete (KP5)				△																								
Development Article Preliminary Design Review				△																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>	Project (Number/Name) MD10 / <i>Precision Tracking Space System (PTSS)</i>

Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Optical Payload Breadboard Subassemblies Complete (KP5)	4	2013	4	2013
Development Article Preliminary Design Review	4	2013	4	2013

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD40 / Program-Wide Support
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: Program-Wide Support	1.499	11.529	-	-	-	-	-	-	-	-	-	13.028
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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

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

	FY 2013	FY 2014	FY 2015
Title: Program Wide Support	11.529	-	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A, Mission Description and budget item justification			
FY 2014 Plans: PTSS program cancelled beginning FY 2014			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	11.529	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / <i>Precision Tracking Space System</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
C. Other Program Funding Summary (\$ in Millions) N/A		
Remarks		
D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604883C / Precision Tracking Space System	Project (Number/Name) MD40 / Program-Wide Support
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Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Facilities and Maintenance	MIPR	Various; Multi : AL Less than CA Less than CO, VA	0.000	0.981		-		-		-		-	Continuing	Continuing	Continuing
Program Wide Support - Agency Operations Management	Allot	Various; Multi : AL, CA, CO, VA	0.000	1.074		-		-		-		-	-	1.074	-
Program Wide Support - Agency Operations and Support Services (CPFF)	C/CPFF	Various; Multi : AL, CO, VA	1.499	9.328		-		-		-		-	-	10.827	-
Program Wide Support - Agency Operations and Support Services (FFP)	C/FFP	Various; Multi : VA, CO	0.000	0.146		-		-		-		-	-	0.146	-
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	-		-		-		-		-	-	-	-
Subtotal			1.499	11.529		-		-		-		-	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	1.499	11.529	-	-	-	-	-	-	-

Remarks
N/A

UNCLASSIFIED

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	15.596	-	-	-	-	-	-	-	-	-	15.596
MD95: <i>Advanced Remote Sensor Technology</i>	-	14.698	-	-	-	-	-	-	-	-	-	14.698
MD40: <i>Program-Wide Support</i>	-	0.898	-	-	-	-	-	-	-	-	-	0.898

MDAP/MAIS Code: 362

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

Note

FY 2014 and 2015 funding is requested in the Discrimination Sensor Technology Program Element, 0603177C.

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 Discrimination Sensor Technology PE (0603177C), Project MD95. 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).

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	58.742	-	-	-	-
Current President's Budget	15.596	-	-	-	-
Total Adjustments	-43.146	-	-	-	-
• Congressional General Reductions	-0.025	-			
• Congressional Directed Reductions	-40.000	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-1.398	-			
• SBIR/STTR Transfer	-0.222	-			
• Other Adjustment	-1.501	-	-	-	-

Change Summary Explanation

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD95: <i>Advanced Remote Sensor Technology</i>	-	14.698	-	-	-	-	-	-	-	-	-	14.698
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

Starting in FY 2014, the content planned in the Advanced Remote Sensor Technology (ARST) program transferred to the Ballistic Missile Defense Technology Program Element (0603175C). This content includes maturing emerging advanced detectors, focal planes, and algorithms.

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

	FY 2013	FY 2014	FY 2015
<p>Title: Advanced Remote Sensor Technology</p> <p align="right">Articles:</p> <p>Description: FY 2014 and 2015 funding is requested in the Discrimination Sensor Technology Program Element, 0603177C, Project MD95.</p> <p>FY 2013 Accomplishments:</p> <ul style="list-style-type: none"> -Completed advanced sensor data mining. Reviewed prior MDA programs and other Service/Agency advanced sensor programs. Defined a cost effective incremental program to develop and test next generation advanced sensor technology for missile defense applications. -Initiated advanced sensor technology development. Awarded two contracts to General Atomics to demonstrate advanced sensor concepts and funded Massachusetts Institute of Technology (MIT)/ Lincoln Laboratory (LL) to characterize the Multi-Spectral Targeting System(MTS)-C for missile defense applications. Successfully demonstrated acquisition/tracking of boosting missiles during representative Ballistic Missile Defense System (BMDS) tests (Flight Test Mission (FTM)-21, FTM-22). -Initiated development of advanced sensor system control algorithms and software. Successfully demonstrated first time control of an MTS-C sensor by an upgraded airborne processor against boosting missiles during representative BMDS tests (FTM-21, FTM-22). -Updated models and simulation for advanced sensor system functionality. Verified advanced sensor design modeling and simulation tools and validated advanced sensor functionality. <p>FY 2014 Plans:</p>	<p>14.698</p> <p>-</p>	<p>-</p> <p>-</p>	<p>-</p> <p>-</p>

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
N/A			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	14.698	-	-

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

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor data mining	FFRDC	Various : Various	0.000	0.540		-		-		-		-	-	0.540	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (1)	C/CPFF	General Atomics : Poway CA	0.000	6.103		-		-		-		-	-	6.103	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (2)	C/CPFF	Space Dynamics Lab : Logan UT	0.000	1.173		-		-		-		-	-	1.173	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (3)	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	1.440		-		-		-		-	-	1.440	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development (4)	Various	Various : Various	0.000	0.529		-		-		-		-	-	0.529	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Development of advanced sensor system control algorithms and software	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	0.720		-		-		-		-	-	0.720	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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Product Development (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (1)	MIPR	Aviation and Missile Research Development and Engineering Center : Redstone Arsenal, AL	0.000	1.200		-		-		-		-	-	1.200	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (2)	FFRDC	Massachusetts Institute of Technology / Lincoln Laboratory : Lexington MA	0.000	0.720		-		-		-		-	-	0.720	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality (3)	Various	Various : Various	0.000	0.677		-		-		-		-	-	0.677	-
Subtotal			0.000	13.102		-		-		-		-	-	13.102	-

Remarks
N/A

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

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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Test and Evaluation (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Subtotal			-	-		-		-		-		-	-	-	-

Remarks

N/A

Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor data mining	Various	Various : Various	0.000	0.066		-		-		-		-	-	0.066	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Advanced sensor technology development	Various	Various : Various	0.000	1.127		-		-		-		-	-	1.127	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Development of advanced sensor system control algorithms and software	Various	Various : Various	0.000	0.087		-		-		-		-	-	0.087	-
Advanced Remote Sensor Technology - Advanced Remote Sensor Technology - Updated models and simulation to verify advanced sensor system functionality	Various	Various : Various	0.000	0.316		-		-		-		-	-	0.316	-
Subtotal			0.000	1.596		-		-		-		-	-	1.596	-

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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Management Services (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	14.698	-	-	-	-	-	14.698	-

Remarks
N/A

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD95 / <i>Advanced Remote Sensor Technology</i>
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Significant Event Complete ▲ Milestone Decision Complete ★ Element Test Complete ◆ System Level Test Complete ● Complete Activity ✦
 Significant Event Planned △ Milestone Decision Planned ☆ Element Test Planned ◇ System Level Test Planned ○ Planned Activity ☆

	FY 2013				FY 2014				FY 2015				FY 2016				FY 2017				FY 2018				FY 2019			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
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 sensor characterization			✦	✦																								

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Exhibit R-4A, RDT&E Schedule Details: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) 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	3	2013	4	2013
Advanced sensor test bed integration and demonstrations	3	2013	4	2013
Advanced sensor algorithm and prototype software development	3	2013	4	2013
Acquisition, Pointing, and Tracking sensor characterization	3	2013	4	2013

Note

No funding was received during the first and second quarter of FY13 during CRA.

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD40: <i>Program-Wide Support</i>	-	0.898	-	-	-	-	-	-	-	-	-	0.898
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

Program-Wide Support (PWS) contains non-headquarters management costs in support of Missile Defense Agency (MDA) functions and activities across the entire Ballistic Missile Defense System (BMDS). It includes Government Civilians, Contract Support Service, and Federally Funded Research and Development Center (FFRDC) providing integrity and oversight of the BMDS as well as, supporting MDA in enabling the development and evaluation of technologies that will respond to the changing threat. In addition, includes Global Deployment personnel and support performing deployment site preparation and activation. Other costs included provide facility capabilities for MDA Executing Agent locations, such as physical and technical security, legal services, travel and agency training, office and equipment leases, 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 2013	FY 2014	FY 2015
Title: Program Wide Support	0.898	-	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: See paragraph A, Mission Description and Budget Item Justification			
FY 2014 Plans: FY 2014 plans have been transferred to BMD Technology (0603175C) Program Element			
FY 2015 Plans: N/A			
Accomplishments/Planned Programs Subtotals	0.898	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>

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

Remarks

D. Acquisition Strategy
NA

E. Performance Metrics
NA

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604886C / <i>Advanced Remote Sensor Technology (ARST)</i>	Project (Number/Name) MD40 / <i>Program-Wide Support</i>
--------------------------------------------------	-----------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Program Wide Support - Agency Operations and Support Services	Reqn	Various : Multi: AL, CA, CO, VA	0.000	-		-		-		-		-	-	-	-
Program Wide Support - Facilities and Maintenance	MIPR	Various : Multi: AL, CA, CO, VA	0.000	0.898		-		-		-		-	-	0.898	-
Subtotal			0.000	0.898		-		-		-		-	-	0.898	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	0.898	-	-	-	-	-	0.898	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide / BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	-	0.946	0.961	-	0.961	0.984	1.003	1.022	1.048	Continuing	Continuing
MDCS: <i>Cyber Security Initiative</i>	-	-	0.946	0.961	-	0.961	0.984	1.003	1.022	1.048	Continuing	Continuing

MDAP/MAIS Code: 362

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

Note

N/A

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 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	-	0.946	0.961	-	0.961
Current President's Budget	-	0.946	0.961	-	0.961
Total Adjustments	-	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-	-	-	-	-

Change Summary Explanation

N/A

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

Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0305103C / Cyber Security Initiative				Project (Number/Name) MDCS / Cyber Security Initiative			
COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MDCS: <i>Cyber Security Initiative</i>	-	-	0.946	0.961	-	0.961	0.984	1.003	1.022	1.048	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

The 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 2013	FY 2014	FY 2015
Title: DoD CI in Cyberspace Initiative	-	0.946	0.961
Articles:	-	-	-
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.			
FY 2013 Accomplishments: N/A			
FY 2014 Plans:			

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>	Project (Number/Name) MDCS / <i>Cyber Security Initiative</i>
--------------------------------------------------	--------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>- 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.</p> <p>-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.</p> <p>-- 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.</p> <p>-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> <p>FY 2015 Plans:</p> <p>- 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.</p> <p>-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.</p> <p>-- 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.</p> <p>-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	-	0.946	0.961

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

<u>Line Item</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u> <u>Base</u>	<u>FY 2015</u> <u>OCO</u>	<u>FY 2015</u> <u>Total</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>Cost To</u> <u>Complete</u>	<u>Total Cost</u>
• 0603890C: <i>BMD Enabling Programs</i>	336.763	372.309	410.863	-	410.863	412.264	400.813	531.752	637.123	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

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

Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0305103C / <i>Cyber Security Initiative</i>	Project (Number/Name) MDCS / <i>Cyber Security Initiative</i>
--------------------------------------------------	--------------------------------------------------------------------------------------------	-------------------------------------------------------------------------

Support (\$ in Millions)				FY 2013		FY 2014		FY 2015 Base		FY 2015 OCO		FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
DoD CI in Cyberspace Initiative - Counterintelligence	Allot	MDA : Various MDA Locations	0.000	-		0.946		0.961	Jan 2015	-		0.961	Continuing	Continuing	Continuing
Subtotal			0.000	-		0.946		0.961		-		0.961	-	-	-

Remarks
N/A

	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	0.000	-		0.946		0.961	-	-	-

Remarks
N/A

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	-	68.858	-	-	-	-	-	-	-	-	-	68.858
MD45: <i>Small Business Innovative Research</i>	-	68.858	-	-	-	-	-	-	-	-	-	68.858

MDAP/MAIS Code: 362

The FY 2015 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 technology that can be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, 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 capability and supports fielding of an integrated and effective capability to the Warfighter.
- Advanced Technology: Develops cost and operationally effective capability; explores and develops technology to counter future threats.

Small Business Innovation Research topic areas for FY 2013 included:

- Intelligent adaptive needs characterization for modeling & simulation (M&S) Systems Engineering
- Radio Frequency (RF) transparent composite airdrop platform for MDA airborne target applications
- Real-time Ladar scene rendering and projection component technology
- Development of high-fidelity techniques to model impact flash and post-impact thermal signature prediction and support kill assessment
- Hypervelocity intercept modeling with first-principle, physics-based tools

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I</i> BA 6: <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>	
<ul style="list-style-type: none">-Improved manufacturing processes for propulsion technology-Debris assessment from spectrally diverse sensors and air sample to aid post-intercept weapons typing-Interceptor avionics-Space component miniaturization-Global missile defense battle management-Tin Whisker mitigation technology for SN-based surface finishes on electronic assemblies and microelectronic devices-Improved packaging and thermal management for high power electronics and solid state lasers-Advanced Divert and Attitude Control-Advanced synergistic structures for interceptor kill vehicles-Photonic multi-beam receive arrays-Large format space focal plane array technology-Resource optimization for battle management-Direct electrically pumped high energy flowing media laser technology-Develop and demonstrate high performance infrared focal plane arrays with advanced quantum structures-Smart infrared focal plane arrays and advanced electronics-Interceptor seekers and passive sensors-Methodologies for accurate scene generation of complex target plume characteristics-Methodologies for developing extremely large infrared (IR) scene projectors-Acquisition, tracking and pointing technology-Development of line-narrowed diode pumps sources for Diode Pumped Alkali Laser (DPAL) systems-Development of optical quality thin-film coatings for DPAL windows-Innovative signature exploitation for long range object discrimination-Sensor resource management-Light weight Divert and Attitude Control Systems for missile defense interceptors-Anti-Tamper technology for missile defense-Composite structures for lightweight missile components-Hot gas components for lightweight missile components-Advanced power storage systems for interceptors-Innovative propulsion technology for missile defense interceptors-Characterization and Incorporation of Vernier engines within the Plume Modeling Process-Advanced particle treatment in modeling rocket exhaust plumes-Improved techniques for optimistic modeling-Mitigation of the effects of the ionosphere on Upgraded Early Warning Radar (UEWR)-Methodology for accurate assessment of target characteristics-Telemetry impact reduction for target objects		

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

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>
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- Techniques for anchoring debris models
- Dual S & C-band telemetry transmitter system for missile testing
- Novel planning algorithms for hybrid land and sea platform sensor coordination
- Asset pairing for battle management
- Radio Frequency (RF)- Infrared (IR) data fusion for track and data correlation
- Techniques for performing warhead characterization
- Innovative tests and techniques for modeling detonation probability and debris characterization of high explosive submunition warheads
- RF material property characterization
- Advanced techniques for lossless compression of target vehicle telemetry
- Modular hypergolic leak detector
- Acquisition, tracking and pointing technology for high energy laser applications
- Optics and coatings for high energy laser applications
- Atmospheric characterization for Directed Energy applications
- Light weight rubidium-metal vapor circulating system
- Lightweight communication equipment for interceptor communications
- Miniature extendable nozzles or actuating nozzles for improved specific impulse (Isp) of Divert Attitude Control System (DACS) thrusters
- Powdered propellant rocket motor
- Waste heat recovery of rocket motors for reduction of battery weight
- Origin marking of components for avoidance of counterfeit parts
- Thermal isolation of nozzle exit cone insulators
- Anchoring post-intercept debris prediction tools
- Innovative designs for reliable electro-explosive ordnance devices
- Cost effective, reliable service life extension testing of Ordinance Devices
- Correlation identification and evaluation of new technology or methodology to accurately measure inertial movement in a stressing flight environment

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6: RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>
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B. Program Change Summary (\$ in Millions)	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO	FY 2015 Total
Previous President's Budget	-	-	-	-	-
Current President's Budget	68.858	-	-	-	-
Total Adjustments	68.858	-	-	-	-
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	68.858	-			
• Other Adjustment	-	-	-	-	-

Change Summary Explanation

FY 2013 funds were transferred to Small Business Innovation Research/Small Business Technology Transfer from other Program Elements

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

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>	Project (Number/Name) MD45 / <i>Small Business Innovative Research</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD45: <i>Small Business Innovative Research</i>	-	68.858	-	-	-	-	-	-	-	-	-	68.858
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

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

Note

N/A

A. Mission Description and Budget Item Justification

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 technology that can be commercialized. The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs will develop new dual-use technology for possible future Missile Defense Agency (MDA) Ballistic Missile Defense Systems (BMDS) needs. Dual-use means that the technology will be judged on the potential for future private sector investment both as a vehicle for reducing development time and cost, unit costs of new MDA BMDS technology, and as a route to national economic growth through new commercial products. MDA will conduct the competition, 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 capability and supports fielding of an integrated and effective capability to the Warfighter.
- Advanced Technology: Develops cost and operationally effective capability; explores and develops technology to counter future threats.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2013	FY 2014	FY 2015
Title: Small Business Innovative Research	68.858	-	-
Articles:	-	-	-
Description: N/A			
FY 2013 Accomplishments: Awarded 142 Phase Is (\$88K average award) in the following 9 research areas:			

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0605502C / <i>Small Business Innovative Research - MDA</i>	Project (Number/Name) MD45 / <i>Small Business Innovative Research</i>

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 6:</i> <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0901598C / <i>Management HQ - MDA</i>
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
Total Program Element	28.824	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing
MD38: <i>Management Headquarters</i>	28.824	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing

MDAP/MAIS Code: 362

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

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.

B. Program Change Summary (\$ in Millions)

	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015 Base</u>	<u>FY 2015 OCO</u>	<u>FY 2015 Total</u>
Previous President's Budget	34.855	37.712	38.580	-	38.580
Current President's Budget	31.674	34.712	36.998	-	36.998
Total Adjustments	-3.181	-3.000	-1.582	-	-1.582
• Congressional General Reductions	-0.046	-			
• Congressional Directed Reductions	-	-3.000			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-0.339	-			
• SBIR/STTR Transfer	-	-			
• Other Adjustment	-2.796	-	-1.582	-	-1.582

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Exhibit R-2, RDT&E Budget Item Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> / BA 6: <i>RDT&E Management Support</i>	R-1 Program Element (Number/Name) PE 0901598C / <i>Management HQ - MDA</i>	

Change Summary Explanation

FY 2015 reduction of \$1.582 is a result of Departmental Management Headquarters reductions.

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency **Date:** March 2014

Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0901598C / Management HQ - MDA	Project (Number/Name) MD38 / Management Headquarters
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COST (\$ in Millions)	Prior Years	FY 2013	FY 2014	FY 2015 Base	FY 2015 OCO #	FY 2015 Total	FY 2016	FY 2017	FY 2018	FY 2019	Cost To Complete	Total Cost
MD38: Management Headquarters	28.824	31.674	34.712	36.998	-	36.998	36.343	35.441	34.675	33.650	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

The FY 2015 OCO Request will be submitted at a later date.

Note

N/A

A. Mission Description and Budget Item Justification

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 2013	FY 2014	FY 2015
<p>Title: HQ Civilian Salaries</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification</p> <p>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</p> <p>FY 2015 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</p>	23.629	23.290	23.190
	-	-	-
<p>Title: HQ Travel</p> <p align="right">Articles:</p>	0.996	1.004	0.983
	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014			
Appropriation/Budget Activity 0400 / 6		R-1 Program Element (Number/Name) PE 0901598C / Management HQ - MDA	Project (Number/Name) MD38 / Management Headquarters		
B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)		FY 2013	FY 2014	FY 2015	
<i>Description:</i> N/A					
FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification					
FY 2014 Plans: Provide mission essential government travel					
FY 2015 Plans: Provide mission essential government travel					
Title: HQ Utilities, Facilities, Agency Operations, Subsidy, Transportation and Logistics		2.838	2.378	2.280	
		Articles:	-	-	-
<i>Description:</i> N/A					
FY 2013 Accomplishments: 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 efficiencies gained through modified contracts for shuttle service, ground transportation and motorpool services as well as efficiencies gained in base operations.					
FY 2015 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 2014 to 2015 is a result of efficiencies gained through modified contracts for shuttle service, ground transportation and motorpool services as well as efficiencies gained in base operations.					
Title: Security and Emergency Management		1.150	3.253	3.253	
		Articles:	-	-	-

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency		Date: March 2014
Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0901598C / Management HQ - MDA	Project (Number/Name) MD38 / Management Headquarters

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
<p>Description: N/A</p> <p>FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification.</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - 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 <p>- Increase from FY 2013 to FY 2014, is the result of realignment of Security Operation requirements from Budget Project MD40 to more accurately account for Management Headquarters (HQ) activities.</p> <p>FY 2015 Plans:</p> <ul style="list-style-type: none"> - 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 			
<p>Title: HQ Contract Services</p> <p align="right">Articles:</p> <p>Description: N/A</p> <p>FY 2013 Accomplishments: See paragraph A: Mission Description and Budget Item Justification</p> <p>FY 2014 Plans:</p> <ul style="list-style-type: none"> - Provide contract support services to support mission activities for acquisition, business operations, internal review, general counsel, administrative support, public affairs, and international affairs - FY 2014 reflects the appropriation <p>FY 2015 Plans:</p>	3.061 -	4.787 -	7.292 -

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Exhibit R-2A, RDT&E Project Justification: PB 2015 Missile Defense Agency	Date: March 2014
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Appropriation/Budget Activity 0400 / 6	R-1 Program Element (Number/Name) PE 0901598C / <i>Management HQ - MDA</i>	Project (Number/Name) MD38 / <i>Management Headquarters</i>
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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)	FY 2013	FY 2014	FY 2015
- Provide contract support services to support mission activities for acquisition, business operations, internal review, general counsel, administrative support, public affairs, and international affairs - FY 2015 reflects true Management Headquarter requirements			
Accomplishments/Planned Programs Subtotals	31.674	34.712	36.998

C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A